

Christopher
Hunter/DC/USEPA/US
01/12/2011 01:23 PM

To Julia McCarthy, Ross Geredien
cc Matthew Klasen, Stefania Shamet
bcc
Subject Fw: Instructions and attachments for reviews 30 questions at a time

Ross - 241 - 270
Julia 271 - 307

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/12/2011 01:22 PM -----

From: Matthew Klasen/DC/USEPA/US
To: Christopher Hunter/DC/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA
Date: 01/12/2011 10:57 AM
Subject: Re: Fw: Instructions and attachments for reviews 30 questions at a time

Chris and Stef:

Here are the other chunks of RD comments for when people are ready.

mk



271A-307A.docx



241A-270A.docx

ATTACHMENTS REDACTED - DELIBERATIVE

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Christopher Hunter	Spruce Team, here are the batches of response...	01/12/2011 09:36:55 AM
--------------------	--	------------------------

From: Christopher Hunter/DC/USEPA/US
To: Ross Geredien/DC/USEPA/US@EPA, Julia McCarthy/R8/USEPA/US@EPA, Palmer Hough/DC/USEPA/US@EPA
Cc: Marcel Tchaou/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA
Date: 01/12/2011 09:36 AM
Subject: Fw: Instructions and attachments for reviews 30 questions at a time

Spruce Team,
here are the batches of responses to comments that need to be checked for references, instructions, and the latest draft of the Reference Appendix. Focus on the references first, then circle back for the cross-references if you have time.

Thanks!

Ross - please take 1-30
Julia - 31-60
Palmer - 61-90

[attachment "Appendix 7 FD Marcel version 1-11-2011Harmonized.doc" deleted by Matthew Klasen/DC/USEPA/US]

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----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/12/2011 09:32 AM -----

From: Matthew Klasen/DC/USEPA/US
To: Christopher Hunter/DC/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA
Cc: Marcel Tchaou/DC/USEPA/US@EPA
Date: 01/12/2011 09:30 AM
Subject: Instructions and attachments for reviews 30 questions at a time

Chris / Stef:

Here are instructions and responses, broken up in 30-question increments. Chris: Why don't you assign the first couple groups of these, and let Stef know; she can then farm out the next batch to R3.

Thanks,
Matt

Instructions: Go through and do the following :

- **Go through the document once and check for citations .** Verify that each citation included in the response is included in the reference list. If it isn't, make a note of the reference (e.g., Silva 2010) and a sentence for context (e.g., Silva (2010) found that birds are important).
- **Send citations that are missing and context (in groups of five, or once you're done going through the whole document, to Marcel, and copy Matt.** Make sure you include the questions # so Matt can make a note in the master document.
- **Once you're done going through citations , then go back through and check to make sure references to FD/RD/PD or Appendices or Figures /Tables are correct. If not, keep a running list and email Matt all of the changes (just note in an email, not in Track Changes).**

Call Matt (202-566-0780) or Chris (202-566-1454) with any questions.

For Distributing to Volunteers

[attachment "121A-150A.docx" deleted by Matthew Klasen/DC/USEPA/US] [attachment "1A-30A.docx" deleted by Matthew Klasen/DC/USEPA/US] [attachment "31A-60A.docx" deleted by Matthew Klasen/DC/USEPA/US] [attachment "61A-90A.docx" deleted by Matthew Klasen/DC/USEPA/US] [attachment "91A-120A.docx" deleted by Matthew Klasen/DC/USEPA/US]

Background Material (Chris: Also send folks the FD and appendices, especially the reference list. Probably too big for one email .

Matt Klasen

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Christopher
Hunter/DC/USEPA/US
01/12/2011 01:31 PM

To Karyn Wendelowski
cc
bcc
Subject Re: Spruce Jurisdictional analysis

Thanks Karyn,
a couple of minor suggestions on the first 2 pages.



ATTACHMENT REDACTED - DELIBERATIVE

 Spruce Jurisdictional Analysis - ch.doc

Chris Hunter
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Karyn Wendelowski [Speak now if you have concerns:](#)

01/12/2011 01:14:47 PM

From: Karyn Wendelowski/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA, John Forren/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 01:14 PM
Subject: Spruce Jurisdictional analysis

Speak now if you have concerns:

[attachment "Spruce Jurisdictional Analysis.doc" deleted by Christopher Hunter/DC/USEPA/US]

Lynn Zipf/DC/USEPA/US
01/12/2011 01:31 PM

To: Matthew Klasen
cc
bcc
Subject: Re: PLEASE RESPOND NOW - Updated draft Spruce Se response (comment #67A)

Phew -

Lynn Zipf
Special Assistant
Office of Science and Technology
Office of Water

P: (202) 564-1509

Matthew Klasen

----- Original Message -----

From: Matthew Klasen
Sent: 01/12/2011 01:20 PM EST
To: Lynn Zipf
Subject: Re: PLEASE RESPOND NOW - Updated draft Spruce Se response (comment #67A)
Hey Lynn,

Thanks again for all your help on this. (b) (5)

Thanks again!

-Matt

Matt Klasen
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Office of Water (IO)
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cell (202) 380-7229

Lynn Zipf (b) (5) /12/2011 09:32:42 AM

From: Lynn Zipf/DC/USEPA/US
To: Charles Delos/DC/USEPA/US@EPA, Joe Beaman/DC/USEPA/US@EPA
Cc: Betsy Behl/DC/USEPA/US@EPA
Date: 01/12/2011 09:32 AM
Subject: PLEASE RESPOND NOW - Updated draft Spruce Se response (comment #67A)

(b) (5)

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

Lynn Zipf
Special Assistant
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----- Forwarded by Lynn Zipf/DC/USEPA/US on 01/12/2011 09:29 AM -----

From: Matthew Klasen/DC/USEPA/US
To: "Lynn Zipf" <Zipf.Lynn@epamail.epa.gov>
Date: 01/11/2011 04:16 PM
Subject: Fw: Updated draft Spruce Se response (comment #67A)

Matt Klasen
U.S. Environmental Protection Agency
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Cell (202) 380-7229
Matthew Klasen

----- Original Message -----

From: Matthew Klasen
Sent: 01/10/2011 01:06 PM EST
To: Betsy Behl; Joe Beaman
Cc: Stefania Shamet; Christopher Hunter; Frank Borsuk; Gregory Peck; Karyn Wendelowski; Margaret Passmore
Subject: Updated draft Spruce Se response (comment #67A)
Betsy and Joe:

(b) (5)

Thanks,
Matt

[attachment "2011-01-10 Spruce Se Response (67A).docx" deleted by Matthew Klasen/DC/USEPA/US]

Matt Klasen
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Gregory Peck/DC/USEPA/US
01/12/2011 01:46 PM

To: Kevin Minoli, Karyn Wendelowski
cc
bcc
Subject: Fw: Spruce press release gep edits

I assume this is what the final PR will look like - let me know asap if you see any concerns.

Thanks.

----- Forwarded by Gregory Peck/DC/USEPA/US on 01/12/2011 01:46 PM -----

From: Bob Sussman/DC/USEPA/US
To: Betsaida Alcantara/DC/USEPA/US@EPA
Cc: Gregory Peck/DC/USEPA/US@EPA
Date: 01/12/2011 01:42 PM
Subject: Spruce press release gep edits

My edits are enclosed.

Robert M. Sussman
Senior Policy Counsel to the Administrator
Office of the Administrator
(202)-564-7397
US Environmental Protection Agency



- Spruce press release gep edits.docx

ATTACHMENT REDACTED - DELIBERATIVE

Margaret
Passmore/R3/USEPA/US
01/12/2011 02:03 PM

To Stefania Shamet
cc Christopher Hunter, John Forren, Joy Gillespie, Marcel
Tchaou, Matthew Klasen
bcc
Subject Re: Section 91-120

Here is Bernhardt et al. (in review).



Bernhardt et al. in review COPYRIGHTED + supplemental material_Nov 29.pdf

Margaret Passmore
Freshwater Biology Team
Office of Monitoring and Assessment (3EA50)
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Visit our website at <http://epa.gov/reg3esd1/3ea50.htm>

Stefania Shamet

(b) (5)

01/12/2011 01:45:38 PM

From: Stefania Shamet/R3/USEPA/US
To: Joy Gillespie/R3/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US@EPA, John Forren/R3/USEPA/US@EPA, Marcel
Tchaou/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA, Margaret
Passmore/R3/USEPA/US@EPA
Date: 01/12/2011 01:45 PM
Subject: Re: Section 91-120

(b) (5)

Joy Gillespie

(b) (5)

01/12/2011 01:44:17 PM

From: Joy Gillespie/R3/USEPA/US
To: John Forren/R3/USEPA/US@EPA
Cc: Stefania Shamet/R3/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA, Marcel
Tchaou/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 01:44 PM
Subject: Section 91-120

(b) (5)

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Joy Gillespie

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**How many mountains can we mine? Ecological thresholds for freshwater
ecosystems of the Central Appalachians**

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John Amos⁷

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ABSTRACT

Over the last decade, an estimated 2000km of streams in the Central Appalachians have been buried beneath the excess rock waste generated from surface coal mining. In addition to the streams permanently lost through valley filling, many more kilometers of streams throughout the region are impacted by the higher flows and chemical concentrations exported to downstream waters from surface mining operations. Here we estimate for the first time the areal extent of mining that can occur in a watershed before significant ecological impacts are observed in receiving streams. Using new remote sensing analyses together with field sampling data for 283 stream reaches located across a 14 county region in southern West Virginia we demonstrate that changes in streamwater conductivity were strongly positively correlated with the extent of watershed surface mining.. We detected a significant community threshold response to altered ionic strength, with many sensitive taxa declining precipitously and synchronously in abundance at a conductivity of $277\mu\text{S cm}^{-1}$ (95% CI of 176 to $344\mu\text{S cm}^{-1}$). Our analysis is the first to demonstrate that the rapid increase in mining activity within regional headwaters is degrading water quality and freshwater ecosystems at very low mining intensities and over very large geographic scales. We find that stream water quality and benthic communities are significantly altered when as little as ~3% of the upstream watershed is converted to surface mining operations.

INTRODUCTION

In order to compete with western states in supplying inexpensive, low sulfur coal to the US energy market, mining companies throughout the Central Appalachians are increasingly turning to mountaintop mining to access shallow seams of coal^{1,2}. Mountaintop mining is now the most widespread form of coal surface mining across the central Appalachian Mountains, and is particularly intense in southern West Virginia, eastern Kentucky and Tennessee, and southwestern Virginia^{3,4}. In this sparsely populated region, surface mining and mine reclamation activities are the dominant driver of land use change⁵ and as a result of surface coal mining the area has the highest rates of sediment movement in the United States⁶. To reach the coal seams which can be hundreds of feet below the surface, ridge tops are removed creating large quantities of waste rock and coal debris (“overburden”) that must be disposed of to maximize mining efficiency (Figure 1). In the steep topography of the region, stream valleys become the obvious location for disposing of rocks from the mined ridgetops. The resulting valley fills³ can bury either headwater streams or once forested valley slopes under 10s to 100s of meters of overburden⁷. Because MTM operations are less constrained by topography than more traditional contour mining, MTM techniques have allowed surface coal mining operations to expand greatly in size⁴.

The central Appalachian forests that are affected by surface coal mining support among the highest levels of biodiversity and endemism in the temperate zone⁸ leading to significant concerns about the loss of forest biodiversity and ecosystem functions as a result of mining^{4,9}. Much recent attention has been paid to the burial of headwater streams beneath valley fills and the downstream impacts to waters below surface mines¹⁰(Figure 1), in part, because of high profile federal court cases and widely publicized exchanges between the U.S. Environmental Protection Agency (US EPA) and the U.S. Army Corps of Engineers (USACE) over permitting decisions¹¹. Under the authority of the Clean Water Act (CWA; 33 U.S.C. 1252) the US ACE (or a delegated state) must approve regulatory permits to allow mining operations that will result in impacts to waters of the U.S. Prior to authorizing a stream fill operation, the US ACE must assure, among other things, that these activities will not cause significant degradation of the environment (40 C.F.R. § 230.10). To meet this requirement, permittees are required to mitigate for harm done to streams. Typically this is accomplished through the construction of channels on nearby reclaimed mines, the restoration of degraded streams within the watershed, or payment into an in lieu fee mitigation program^{2,12,13}. The

extent to which these actions are sufficient to mitigate for the impacts that MTM have on waterways has been central to legal challenges and environmental advocacy protests calling for tighter regulations on this form of mining^{11,14}.

Scientific studies to inform such cases have been of great interest and have established that impacts can be substantial^{10,12,15,16}. Rain that falls on mined and reclaimed watersheds flows through coal residues and rock overburden rather than surface soils. When exposed to air, pyrite minerals in coal residue release sulfuric acid¹⁷, and the production of this strong acid within a matrix of fragmented rock leads to high rates of rock weathering. Throughout much of the central Appalachians, the high buffering potential of carbonate bedrock neutralizes the acidity generated by pyrite dissolution and releases high concentrations of coal-derived SO_4^{2-} accompanied by elevated concentrations of Ca^{2+} , Mg^{2+} , HCO_3^- derived from parent material¹⁸. The natural acid buffering potential of parent material in much of the region thus generates alkaline mine drainage, characterized by an increase in pH, alkalinity and electrical conductivity in receiving streams¹⁸. The concentration of trace metals and metalloids also tend to be correlated with SO_4^{2-} and conductivity^{12,19}, and in this region elevated concentrations of manganese (Mn) and selenium (Se) are of particular concern due to their known toxicity²⁰. Selenium, weathered from coal minerals, is more soluble at high pH and thus is a particularly problematic toxin in the alkaline mine drainage common to most mountaintop mines²¹. A number of recent studies have documented significant changes in stream macroinvertebrate and fish communities directly downstream of surface mining operations^{10,16,22} and have attributed these declines to the combined effects of heightened concentrations of ions and trace metals delivered from upstream mines.

In response to growing concerns and scientific documentation of the impacts of surface coal mining, on April 1, 2010, the US EPA released their own scientific report and announced new actions to strengthen the permitting process and protect Appalachian waters²³. This included a draft guidance document that set benchmarks for unacceptable levels of conductivity in waters associated with surface mining. Specifically, their research identified conductivity levels of $300 \mu\text{S cm}^{-1}$ in Appalachian headwater streams as the maximum acceptable levels to prevent substantial impacts to native invertebrates²³. This draft benchmark has been challenged by various groups including the National Mining Association (NMA) who filed a lawsuit in U.S. District Court for the

District of Columbia²⁴. While most of NMA's arguments question the legality of EPA's actions, the lawsuit also argues that the conductivity water quality standard is arbitrary and based on unsupported "presumptions" that background levels of conductivity (i.e., non-mining related) are below the benchmark and that significant adverse impacts are related to the length of stream impacted or the number of fills²⁴.

The challenges on both sides highlight the need to fill several scientific gaps that are critical to decisions by regulators and to those the regulations influence. Thus our goal was to address the following questions:

- 1. Is there a clear relationship between conductivity and surface coal mining extent in the central Appalachians that cannot be attributed to other impacts such as development in a watershed?**
- 2. Does the latest state-of-the-art approach designed to statistically detect biological thresholds support the concept of a benchmark and if so, at what conductivity level?**

Previously there has been no effort to quantify the areal extent of surface mining and link that to downstream water quality and aquatic community structure at river basin scales. Since the dominant solutes derived from surface mining that generate high conductivity in receiving streams are conservative ions that do not readily precipitate from solution except at supersaturated concentrations (SO_4^{2-} , Cl , Ca^{2+} , Mg^{2+} , HCO_3^-), high conductivity (and associated biological impacts) should be correlated with the total spatial extent of upstream mining activity. Thus, we analyzed whether there was a statistically significant relationship between the proportion of surface mining in watersheds of southern WV and dissolved ion concentrations or between the extent of surface mining and alterations in stream biota. To determine whether or not there were threshold relationships between stream invertebrates and conductivity, we employed a new form of analysis (Threshold Indicator Taxa Analysis, TITAN²⁵). TITAN is unique in that it first characterizes the responses of individual taxa to an environmental gradient and secondarily aggregates taxa into a community-level metric only after distinguishing the magnitude, direction, and uncertainty in the responses of individual members of the community. Thus, TITAN has distinct advantages over more commonly used community metrics, in that it allows the investigator to identify both taxon-specific and community-level threshold responses to anthropogenic environmental gradients²⁶.

RESULTS & DISCUSSION:

We compiled existing datasets that provided determinations of the spatial extent of surface mining in the region over time by obtaining nonpoint discharge elimination system (NPDES) permit records for mining activities (maintained by WVDEP accessed online 6/24/2010), land cover classification data determined from National Landcover dataset (NLCD 2001), and surface mining maps derived from multidecade (1975, 1985, 1995, 2005) Landsat satellite data for a 59-county area spanning much of the Central Appalachian Coal Region (Figure 2A). We obtained data on water quality and macroinvertebrates that were collected and analyzed by the WV Department of Environmental Protection (WVDEP 2010 provided 6/30/10). Field samples and remote sensing derived mine mapping overlapped for a 14 county study area in southern WV (Figure 2B) from which we acquired a final dataset consisting of 283 stream reaches for which both stream water sample analysis and stream benthic invertebrate collection data were available from summer collection efforts. We delineated watersheds draining to each of these 283 sampling points and estimated the total surface area covered by forests, development of by surface mining operations. Surface mining operations were further classified as mountaintop removal mines (MTM), non MTM surface mines (~contour or strip mines), or valley fills. Our estimates of cumulative surface mining in the region derived from remote sensing image analysis are in close agreement with the cumulative extent of area disturbed through mining reported by NPDES permit inspectors (Figure 2C). It is important to acknowledge that the precision of our remote sensing derived estimates of surface mining has not yet been estimated through ground-truthing. Rigorous evaluation and cross validation of mining maps is a priority for our ongoing research effort.

Within this dataset, 231 streams drained watersheds with some amount of mining (0.03 to 95.7% mined) and 212 streams drained watersheds with >1% of their watershed developed (1 to 20% developed). A total of 19 stream samples were classified from the land use data as forested watersheds (no surface mining or NPDES permits, <1% developed) and the dataset included 12 streams classified as reference watersheds by the state of WV. Stream stations sampled by the WVDEP drained watersheds that had up to 95% ($18 \pm 21\%$, mean \pm sd) of their surface area in active or reclaimed surface mines and up to 20% ($3 \pm 3\%$ mean \pm sd) of their watershed area classified as developed..

To determine if watersheds having a greater proportion of mining have higher significantly higher streamwater conductivity (Question 1), we examined statistical relationships between the areal extent of surface mining and conductivity and solute (sulfate and nitrate) concentrations. We found that the total surface area mined within a watershed, regardless of what year the mining activity was delineated from Landsat imagery, correlated most strongly with water quality metrics.. Analyses that only used the most recent 2005 surface mining delineation, or which excluded all but MTM surface mining operations were less strongly correlated with water quality metrics. As a result of these comparisons, we chose to examine how the cumulative extent of all surface mining within a watershed (across all years and all types) was related to water quality and biological changes in the region. We also examined whether variation in the extent of watershed development was a good predictor of water quality changes.

We found that the proportion of watersheds that were mined was strongly positively correlated with streamwater sulfate and nitrate concentrations and with the electrical conductivity of the water in draining streams (Figure 3). Mined streams had higher alkalinity and pH than unmined streams in the region (Table 1). There were insufficient records of trace metal and metalloid concentrations within our dataset to examine relationships with mining, however analysis of the entire WVDEP database (beyond the 14 county area to which our analyses were restricted) showed that sulfate was strongly positively correlated with trace metals (Mn, Fe, Al) and the metalloid Se¹². In contrast, development activities within the 14 county area were not correlated with conductivity or nitrate and were slightly negatively correlated with sulfate concentrations (Figure 3) and did not lead to significant alterations of pH or alkalinity (Table 1). The negative relationship observed between conductivity and water quality for the upper quantiles of the dataset (Figure 3) occurs because some of the watersheds with little development had large mining impacts whose water quality impacts far exceed that of development in this region (Figure 3). Variation in sulfate, nitrate and conductivity in undeveloped watersheds is highly correlated with the extent of mining in those watersheds.

To assess the macro-invertebrate response to increased mining extent and streamwater conductivity (Question 2), we first examined changes in stream benthic macroinvertebrate diversity and biotic integrity scores by one way ANOVA and Tukey's HSD to compare WV reference streams with the 231 mined streams, split into 5 equally populated bins of increasing mining intensity. We also

performed TITAN²⁵ to examine taxon specific and community level responses to both gradients within this dataset. We found that watershed surface mining leads to substantial changes in stream biota that are much more dramatic than changes attributable solely to development. The diversity of intolerant taxa declined precipitously with mining (Figure 4, supplemental Figure 2) and as a result both types of bioassessment scores developed for West Virginia streams declined with the spatial extent of mining in their watershed. The family level WV Stream Condition Index (WVSCI) and the Genus Level Index of Most Probable Stream Status (GLIMPSS) were significantly lower in mined watersheds compared to state reference sites (Figure 4). For all three metrics, significant declines in diversity and stream ecological health metrics were observed even in the lowest mining category (<3.5% of watershed in surface mines) (Figure 4), suggesting that water pollution associated with even small amounts of surface mining is sufficient to reduce or eliminate many stream taxa.

Using TITAN analysis to examine the aquatic invertebrate responses to the spatial extent of mining revealed statistically significant declines for 39 of the 196 taxa in the data set (Figure 5A). The taxa most sensitive to mining represent a variety of mayfly, stonefly, caddisfly and beetle larvae that are all characteristic to central Appalachian streams and known to be sensitive to water pollution. All negatively responding taxa appeared to be very sensitive to the mining gradient, with all showing sharp declines in abundance at less than 10% mining (Figure 5, Supplemental Figure 1). Prior research has demonstrated that mayflies are especially sensitive to mining-derived contaminants^{10,27} and our results support this, with even the highly tolerant mayfly genus *Baetis* showing a negative response to the mining gradient. The nearly synchronous declines of taxa (SI Figure 1) was consistent with a community-level threshold²⁶, suggesting that surface mining of as little as ~3% (95% CI of 0 to 2.4%) of the upstream watershed results in sharp nonlinear declines in the abundance of many taxa comprising downstream communities (Figure 5B, SI Figure 1). Several taxa increased in relative abundance along the mining gradient, primarily several genera of highly tolerant midges (Chironomidae) the tolerant caddisflies *Chimarra*, *Ceratopsyche* and *Hydropsyche*, and the blackfly *Simulium* (Figure 5A, SI Figure 2). This suite of tolerant organisms is entirely consistent with earlier impact studies^{10,16}, suggesting that the same impacts observed immediately below valley fills are also apparent at the scale of 10-100km² catchments.

Because of the uncertainty surrounding the precision of our surface mining delineation, we performed sensitivity analyses to examine how the TITAN threshold determination was affected by introducing random or systematic error into our % mining estimates (SI Section 2). We found that our cumulative threshold estimate was robust to introduced error, and could only generate a significant increase in the threshold estimate by systematically increasing the estimates of mining area. This is a type of land cover classification error that could be introduced by edge effects, where landcover pixels at the edges of mines are systematically classified as forest cover. Even if we assumed that all mined areas should be expanded by 250m along all edges, we still estimated a community level threshold at 4.6% of the watershed in surface mine (95% CI of 0.34 to 11.85%) (SI Section 2).

Variation in the extent of development is not statistically correlated with the extent of mining within this dataset, yet the majority of watersheds experience both forms of land use change. We reran TITAN analyses on the same dataset oriented along a development rather than the mining gradient and found that many fewer taxa declined significantly with development than with mining (Figure 5C). Those taxa that did respond declined at very low levels of development (0-5%). However, the results of this analysis are complicated by the fact that many of the low development watersheds have variable and sometimes high amounts of surface mining within their boundaries. Indeed, many of the taxa that declined with mining increased in abundance along the development gradient because of the negative relationship between % development and % mining (Figure 5C). While negative response of the invertebrate community peaked at similar values of % development and % mining, the magnitude of the sum of z- scores was much higher for mining (290.3) than for development (134.9). This indicates that more taxa exhibited a more abrupt decline across the mining gradient than across the development gradient (Figure 5B, D).

TITAN analysis of the same dataset across a conductivity gradient found that increases in streamwater conductivity led to significant declines in 50 of the 196 total taxa and explained a larger amount of the variation in abundance data than either land cover variable (sum $z = 379.1$). The threshold at which community changes are most drastic was at $277 \mu\text{S cm}^{-1}$ (95% CI of 176 to $344 \mu\text{S cm}^{-1}$), a number which is remarkably consistent with the EPA Guidance²³ recommended maximum conductivity of $300 \mu\text{S cm}^{-1}$. Across this region, conductivity is highly correlated with

the areal extent of mining (Figure 3). Our analyses suggest that this conductivity threshold is typically reached when <5% of the upstream watershed is impacted by surface mining.

In our analyses we did not distinguish between old or new surface mining because we were unable to find any statistical evidence that the impacts of mining are ameliorated through time. We also did not distinguish between mountaintop mining operations and more traditional surface strip or contour mines in the region because we were unable to detect statistical differences between these two types of mining. Similarly, our efforts to weight impacts based on hydrologic connection to the stream channel (inverse distance weighting approaches) did not improve statistical relationships. The stream sampling dataset acquired from the WVDEP was not collected with the purpose of examining the efficacy of mine reclamation or mining configurations in ameliorating downstream impacts and thus we do not view inability to detect such subtleties in the current dataset as conclusive. Instead we urge that new spatial data on mining activities be used to guide rigorous field sampling campaigns to make these critical comparisons.

CONCLUSIONS

This work demonstrates for the first time a statistically significant relationship between the areal extent of surface mining in the Central Appalachians and variation in both the chemistry and biological community structure of receiving streams. Our analyses demonstrate that even small amounts of surface mining can dramatically increase streamwater conductivity, pH and alkalinity and dramatically reduce the abundance of many aquatic insects. Our community threshold analyses suggest that macroinvertebrate community composition shifts dramatically once streams reach conductivities of ~300 $\mu\text{S}/\text{cm}$ – a level achieved with very low levels of watershed surface mining. An important argument for a casual pathway from mining to conductivity to community thresholds is the large proportion of shared taxa that declined in response to both watershed mining and conductivity. Of the 39 taxa that significantly declined along the mining gradient, 24 significantly declined with increasing conductivity. Conversely, few of the taxa that responded negatively to the development gradient declined with increasing conductivity.

These results have important policy implications. First, the fact that the cumulative impacts of MTM on water quality and on the biological condition of streams are readily quantifiable and

cannot be attributed to development have the potential to inform decisions on the amount of mining regulators allow in a given watershed. Second, using a novel and rigorous method of data analysis to test for thresholds (TITAN), we found a threshold conductivity level ($277\mu\text{S cm}^{-1}$ with 95% CI of $176 - 344\mu\text{S cm}^{-1}$) that is remarkably similar to the benchmark of 300 uS/cm that the US EPA has proposed to be protective of aquatic life in their recently issued guidance document, lending support to their draft conductivity benchmark.

METHODS

Regional Mapping of Surface Mining: Surface mining activity was mapped from digital multispectral images collected by the Multispectral Scanner (MSS) and Thematic Mapper (TM) sensors carried by the Landsat series of remote-sensing satellites. Historical images in the Landsat archive²⁸ were reviewed for cloud cover, smog and haze. Mid-summer images were favored to facilitate the identification of disturbed areas and minimize seasonal variations in solar illumination. To ensure detection of mining disturbance since the 1970s while minimizing the total volume of data for analysis, mid-decade imagery was chosen (SI Section II). Digital elevation data were also acquired for topographic analysis, enabling the identification of ridges and mountaintops throughout the study area as a means of discriminating MTR operations from other types of surface mining. We opted to use 3-arc-second (1×1 minute) DEM data compiled by the U.S. Defense Mapping Agency. This series was distributed as 1×1 degree areas that corresponding to the east or west half of the USGS 1:250,000 scale topographic quadrangle map series. These elevation data are from topographic surveys that mostly pre-date 1976 and therefore provide the best available representation of topography in the study area prior to the advent of mountaintop removal mining. The horizontal position error of this elevation dataset is generally stated to be 100 meters or less. Other supporting digital GIS data included detailed transportation features and populated areas derived from USGS 1:24,000-scale topographic maps²⁹. The river and stream vectors that comprise regional hydrology were compiled from the 1:24,000-scale National Hydrography dataset³⁰.

Image Processing: Image processing and analysis was performed using Erdas IMAGINE image processing and GIS software on a standard Windows-based workstation. All images were placed into a common map projection (UTM Zone 17 North – WGS84 datum) using standard techniques that included the selection of image-to-map tie points by an experienced operator, and digital resampling of the images using a nearest-neighbor algorithm to preserve the original spectral information. Additional processing included the creation of same-date, path-oriented mosaics to simplify the classification

process. The georectified mosaics were then cropped to the study area boundary to reduce computer processing time.

An iterative, two-stage process was developed to identify and delineate areas disturbed by traditional surface mining and by mountaintop removal mining (MTR). First, land cover classification was performed for each date of imagery. Classification followed a two-step process: pixel-based spectral signatures of various land-cover types were identified; then a decision-tree analysis was used to classify areas of active surface mining. Pixel-based classification was performed using the supervised maximum likelihood technique³¹. Given the rugged terrain of the region, the image data were first spectrally enhanced to reduce albedo-related variations in illumination and spectral characteristics using the hyperspherical direction cosine (HSDC) method³². Training samples were selected for each date of imagery to yield land-cover classes compatible with the Anderson Level II system³³, such as bare rock, soil, forest, grasses/crops, water, clouds, etc. The results of this procedure were then modified by classifying any bare rock and soil outside of a 400 meter buffer zone around rivers, highways and agricultural areas. This separates areas of bare soil and rock likely attributable to active mining from areas naturally devoid of vegetation, such as river banks and channels, paved surfaces, and plowed or fallow fields.

Second, topographic analysis was performed to subdivide the classified mining areas into “MTR” and “Other Surface Mining” categories. While the legal definition of MTM as defined by the U.S. Office of Surface Mining is too vague to implement directly into a GIS model, their definition did guide the development of a reproducible, rule-based method by SkyTruth for identifying MTR areas. We started from the perspective that, to qualify as MTR, an individual mining operation had to 1) cross a ridge top or peak, and 2) impact an area significantly larger than a typical conventional strip mine.

Using digital elevation data from the U.S. Geological Survey 1:100,000 series, the terrain parameters that characterize ridge tops and peaks, slopes and valleys were calculated. We defined a ridge top or peak as a point that lies on a local convexity that is orthogonal to a line with no convexity or concavity. After ridge tops and peaks were identified and delineated from the elevation dataset using these criteria, contiguous areas encompassing fewer than 40 acres were eliminated to minimize noise in the analysis.

MTR operations were identified in the mining land-cover class by calculating the percentage of ridge top that comprised the mine’s total area. We produced two categories of MTR mines: contiguous mining

area spanning more than 320 acres and containing more than 40 acres of ridge top, and contiguous mining areas between 40 and 320 acres that contain at least 10 - 40 acres of ridge top in the mined area. Digital boundaries delineating the MTR areas, and the other surface mining areas identified by this analysis were analyzed for the entire region (SI Table 2) and files were exported in GIS-compatible shapefile format.

Water Quality and Stream Benthic Samples: We obtained data on water quality and macroinvertebrates collected and analyzed by the WV Department of Environmental Protection (WVDEP 2010 provided 6/30/10 in response to FOIA request). The full dataset includes water quality, stream habitat and stream benthos information on 6463 stream reaches. Samples were collected between 1996 and 2009. From this large dataset we extracted all sample data that met the following selection criteria: streams <10m wide draining watersheds completely contained within the 14 county area of southern WV for which we had mapped the extent of surface mining; samples for which benthic macroinvertebrate samples were collected during summer surveys and identified to genus; and samples for which at least streamwater conductivity and sulfate concentrations were recorded.

Watershed Delineation for Stream Sampling Stations: Geospatial analysis to determine the areas of surface mining and developed lands upstream of water quality sample locations was performed using Environmental Systems Research Institute's (ESRI's) ArcGIS software, version 9.3.1. Digital elevation model (DEM), hydrography, land cover, surface mining, and water quality sample location data for the entire area draining into the 14 West Virginia counties examined were assembled into a geographic information system (GIS) with all data georeferenced to the Albers Equal Area projection. The DEM data, a subset of the National Elevation Dataset³⁴, were obtained from the National Hydrography Dataset Plus (NHD+)³⁰ and represent elevation as 30 x 30 m pixels. We also obtained flow direction, a derivative of the elevation dataset, as well as 1:100,000 scale stream flow-lines from the NHD+ and added them to our GIS database. The land cover data we obtained are part of the 2001 National Land Cover Database³⁵ and were obtained from the USGS Multi-Resolution Land Characteristics Consortium (MLRC)ⁱ. The DEM, hydrography, and land cover data were all obtained as ArcGIS formatted files in the Albers projection and needed no further processing to be added to our spatial database.

Stream sampling point coordinates were used to construct an ArcGIS point file referenced to a geographic coordinate system (WGS 84), which was then projected into the same Albers coordinate system used by the other spatial datasets. Water quality point locations had to be snapped to areas of high flow accumulation (i.e. stream cells) to properly calculate upstream areas. ArcGIS has a tool, “*snap pour point*”, designed to do this, but it worked too coarsely, snapping some points to the wrong stream while unable to snap other points to correct locations. We therefore developed an iterative snapping algorithm that gradually moves a point along routes of higher flow accumulation until a stream cell is met. With all sample points snapped to the nearest stream location, we used the ArcGIS *watershed* tool to identify all cells upstream of a given point. We then calculated the area of historical surface mining and of developed areas by tabulating the number of mined cells (from the mining delineation dataset) and the number of developed cells (from the “Developed” classes in the NLCD 2001 dataset) , respectively.

Statistical Analyses:

For the data analysis to address question 1, we estimated the total watershed area that had ever been mined (active and past surface mining) and used that estimate of cumulative mining extent as a predictor variable. We examined statistical relationships between solute concentrations along both mining and development gradients using quantile regression. We also split the full mining dataset into 5 equal categories of mining extent and examined changes in water quality and in macroinvertebrate taxa richness and in two benthic indicator scores developed for Central Appalachian streams by one way ANOVA and Tukey’s HSD.

TITAN Analysis: To address question 2, we performed Threshold Indicator Taxa Analysis (TITAN³⁶) to examine taxon specific and community level responses to both gradients within this dataset. First, TITAN estimates the value of the environmental variable that produces the greatest change in both the abundance and frequency of occurrence of each individual taxon with a minimum of 5 occurrences within a sample population. Since TITAN requires only 5 occurrences for analysis it is sensitive to rare species, a distinct advantage for detecting local biodiversity loss. The magnitude of the response is quantified as an indicator value z score³⁷. The observed change point for a taxon is the value where the indicator score reaches its maximum. Individual taxa change points are bootstrapped to assess consistency in the direction (negative or positive) and

location of response (confidence intervals) to the gradient. Because indicator scores are standardized to z scores, taxa that do not respond to the gradient achieve very low or negative z scores thus provide minimal weight (or noise) to the assessment of community response.

Potential community-level thresholds are assessed by separating negative (z-) and positive (z+) taxa responses, summing the z+ and z- taxa separately, and tracking these aggregate responses for every potential change point value along the environmental gradient. Synchronous change points among multiple taxa within a narrow range of environmental values results in a distinct peak in the sum of the taxa z-scores (sum(z-) for negative responses, sum(z+) for positive responses). The magnitude of the sum(z) scores are also a direct measure of the magnitude of the effect of an environmental predictor. Collectively, a large, sharp peak in sum(z) values, obvious synchrony in numerous taxa change points, and evolutionary and life-history relationships among responsive taxa that are consistent with known sensitivities to anthropogenic gradients serve as empirical evidence for a community-level threshold²⁶. While uncertainty may be relatively high about the location of low-frequency individual taxa thresholds, synchrony in the conductivity level point-of-decline of many species, including rare ones, bolsters confidence in the robustness of the community threshold.

TABLE 1: Comparison of water quality between land cover categories. Within this table, developed watersheds are watersheds without any evidence of surface mining. Not all environmental variables were collected or recorded for all samples in the dataset, leading to slightly different numbers of replicates within a category.

Category	Criteria	pH		Alkalinity		Conductivity	
		n	Mean \pm SE	n	Mean \pm SE	n	Mean \pm SE
WV Reference Sites	• Identified in WDEP database as Reference site	11	7.0 \pm 0.2 ^a	9	17.4 \pm 5.7 ^a	11	68 \pm 13 ^a
Reference	• > 95% Forested • < 1% Developed • No surface mining mapped • No NPDES Permits	13	7.2 \pm 0.2 ^{ab}	3	**32.6 \pm 28.2**	13	289 \pm 100 ^{ab}
Surface Mining < 3.5% 3.5 to 11% 11 to 21% 21 to 38% > 38%	• All watersheds with mapped surface mining in any year	46 46 46 45 47	7.7 \pm 0.1 ^{bc} 7.7 \pm 0.1 ^{bc} 7.9 \pm 0.1 ^c 7.9 \pm 0.1 ^c 7.7 \pm 0.1 ^{bc}	23 31 20 17 22	65.1 \pm 9.4 ^{ab} 81.2 \pm 12.6 ^{ab} 120.4 \pm 18.3 ^b 118.3 \pm 22.2 ^b 126.5 \pm 15.8 ^b	46 46 46 45 47	431 \pm 76 ^a 550 \pm 40 ^{ab} 750 \pm 69 ^{bc} 863 \pm 79 ^c 1370 \pm 123 ^d
Developed 1 to 5% > 5%	• > 1% Developed • Developed + Forested > 80% • No surface mining mapped • No NPDES permits	14 15	7.1 \pm 0.2 ^a 7.6 \pm 0.2 ^{abc}	9 3	45.6 \pm 14.1 ^{ab} **20.1 \pm 5.5**	14 15	191 \pm 31 ^a 350 \pm 53 ^{ab}

Values that share the same letters as subscripts are not statistically different based Upon Tukey-Kramer HSD posthoc comparisons. ** indicates low sample size – statistics not included. ANOVA showed that categories were significantly different at $p < 0.0001$ for all three metrics.

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FIGURE 1 – Photos from the Hobet mine, a 40mi² surface mine in southern WV. (A) An aerial view of a portion of the mine above Laurel Fork during active mining in 2006 (Vivian Stockman, OVEC); (B) a closeup view of the reclaimed mine surface above Laurel Fork in June 2010; (C) a filled tributary to Laurel Fork in 2010; a settling pond below the valley fill in C; (D) a closeup of the sediments of the valley fill drainage showing carbonate deposits. All photos except A by ESB.

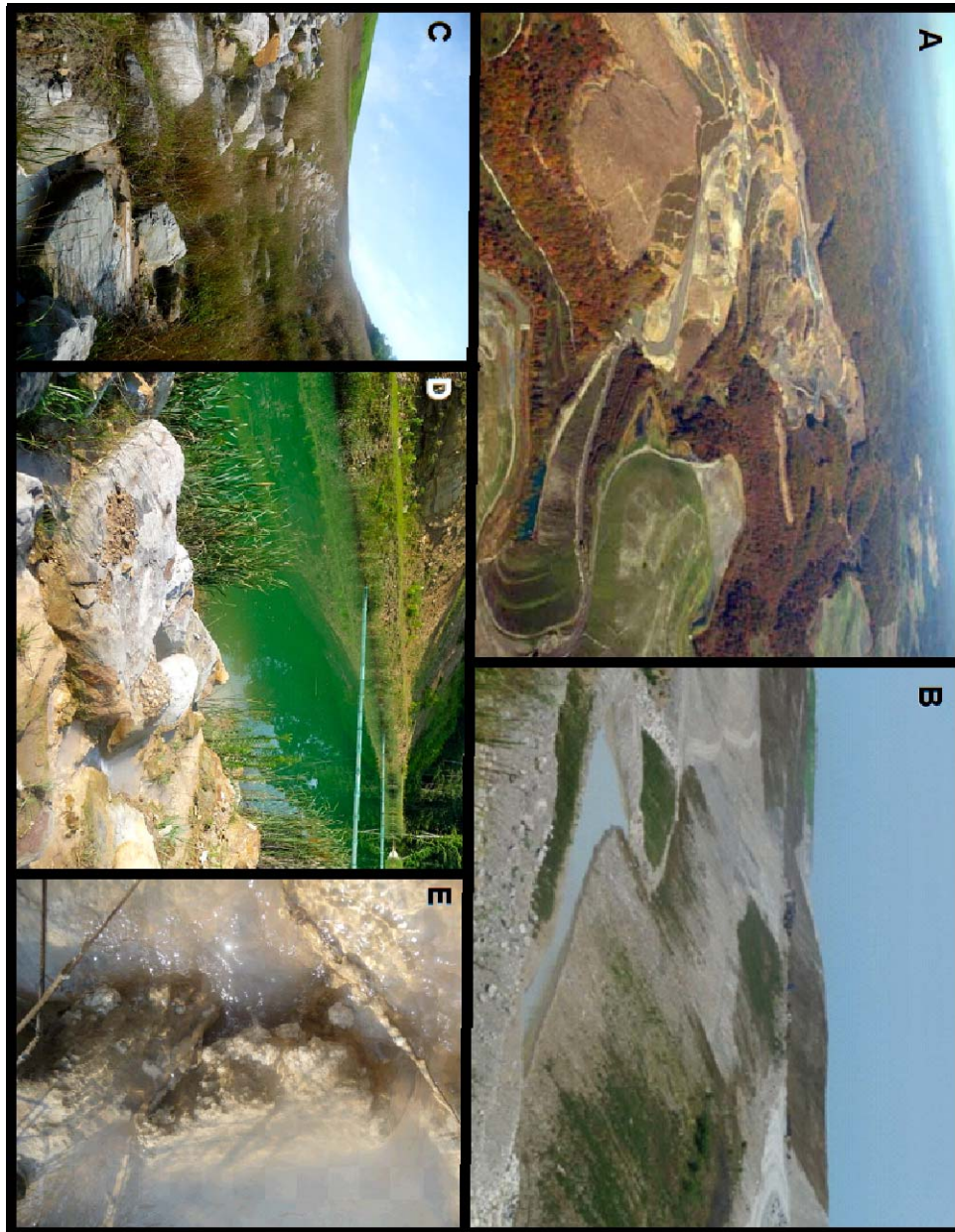


FIGURE 2: (A) Surface mining activity delineated through analysis of remote sensing imagery collected in 1975, 1985, 1995 and 2005. Color progresses from older mining (1976 delineation) in light yellow to recent mining (2005 delineation) mining in burgundy. (B) shows the location of sampling sites used in our in depth analyses. (C) shows the spatial extent of mining reported by SkyTruth (red triangles) relative to that reported based on permit records (black triangles)

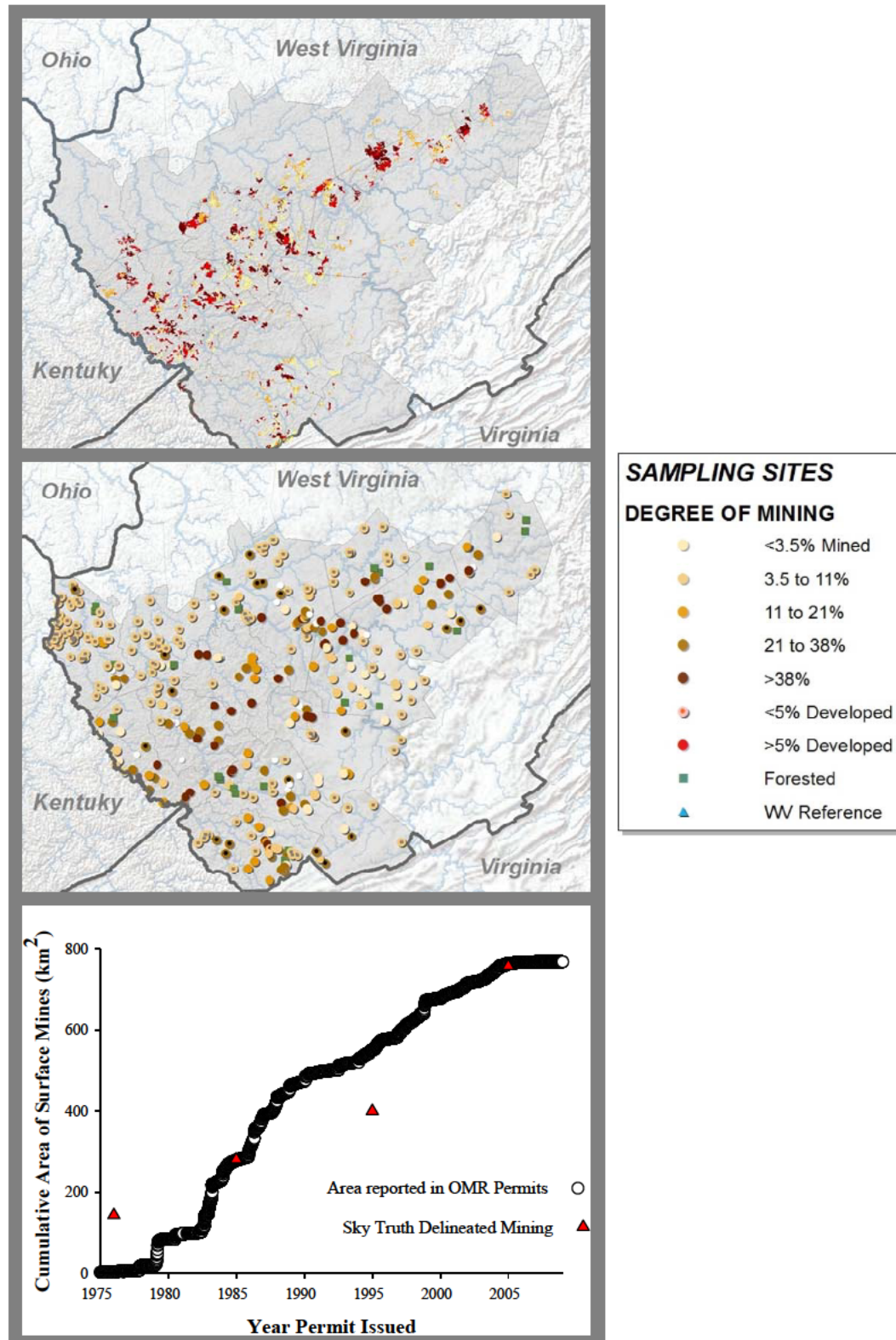


Figure 3. Quantile regressions for streamwater conductivity, nitrate and sulfate across the two dominant land cover gradients, surface mining (A&B) and development (C&D).

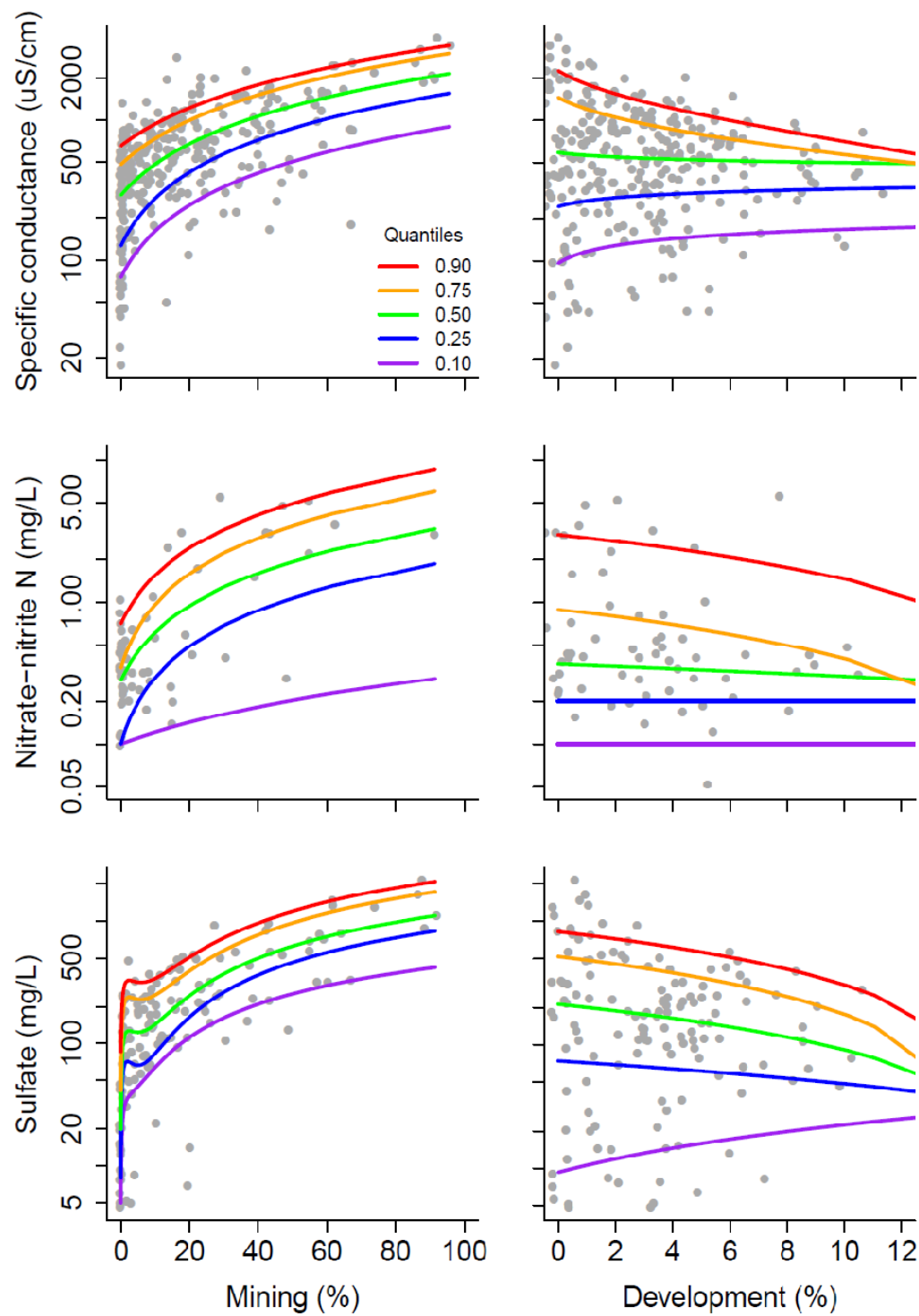


Figure 4. Effects of mining and development on macroinvertebrate community composition metrics. Here boxplots show the median as the black line within the box, the gray box extends between the 25th to 75th percentile distribution of datapoints, the whiskers delineate the 95% confidence interval and all outliers are shown as points outside of this distribution. The alphabetical superscripts indicate statistical differences between categorical variables, categories which share a letter are not significantly different from one another based on Tukey's HSD post hoc comparisons at $p=0.05$ adjusted for multiple comparisons. The ^{ms} superscript in panel A means marginally significant from control ($p=0.054$)

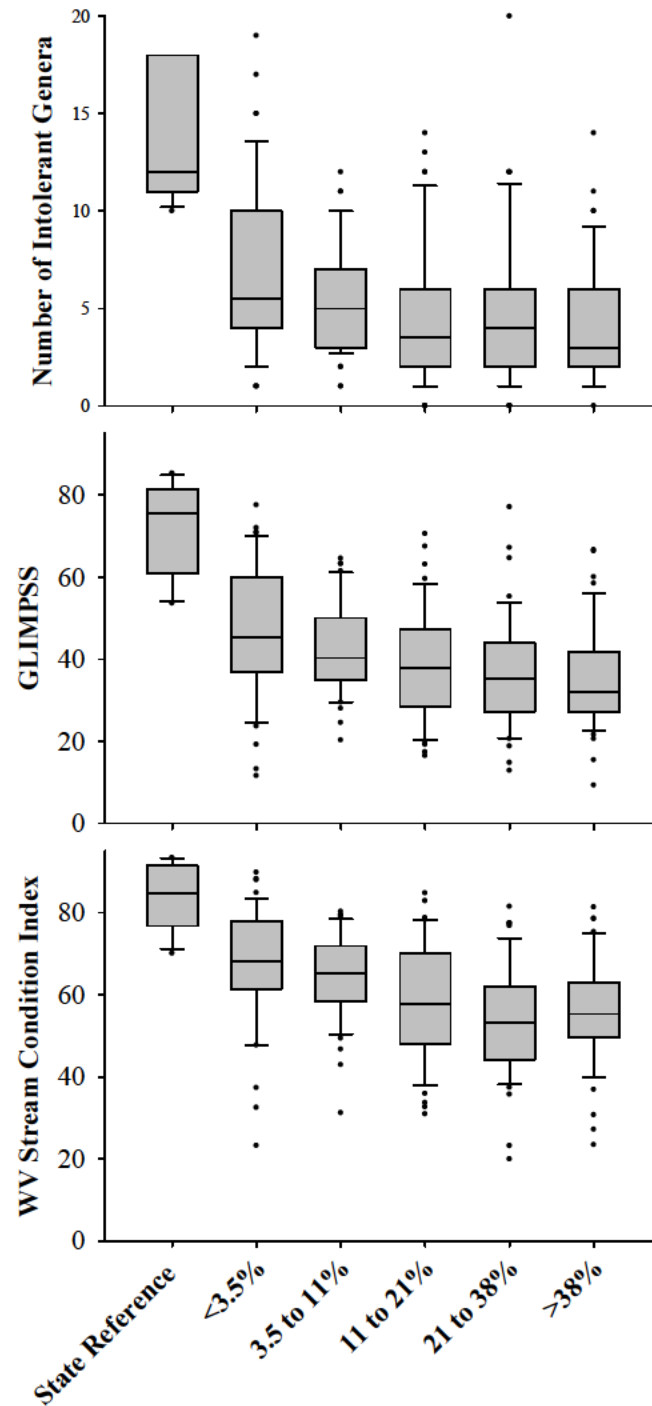


FIGURE 5. TITAN results for taxa having both high purity and reliability when run against either percent mining (A) or percent development (B) as the environmental gradient. Points are centered on the estimated change point for each taxa, horizontal lines indicate 95% CI based on 500 bootstrap replicates, and point size is proportional to the taxa z-score. Taxa which respond negatively across both the mining and development gradients are denoted with (*); Taxa which respond positively across both the mining and development gradients are denoted with (**); Taxa which respond negatively to the mining gradient and positively across the development gradient are denoted with (***) ; Taxa which respond positively to the development gradient but negatively to the mining gradient are denoted with (****).

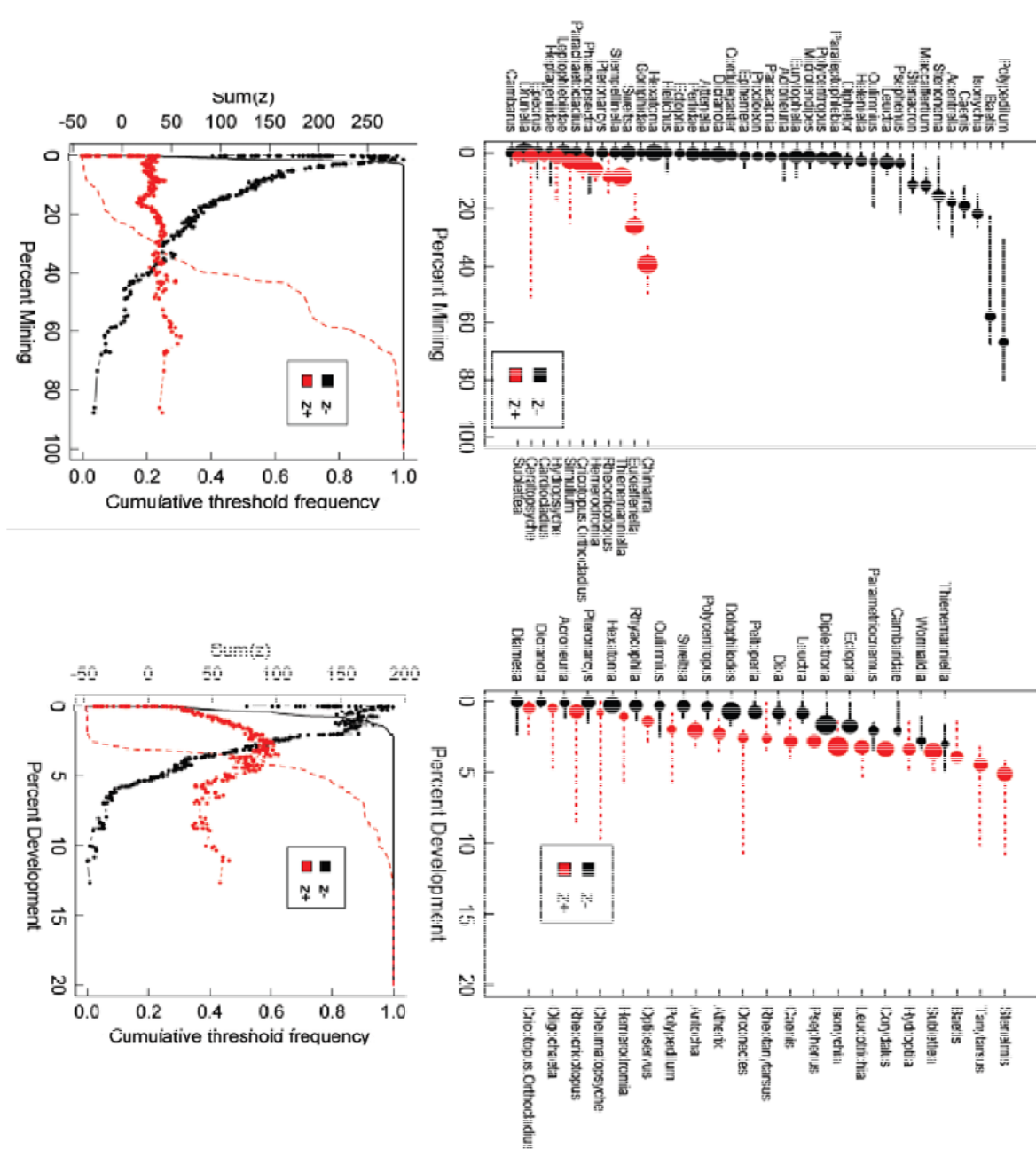
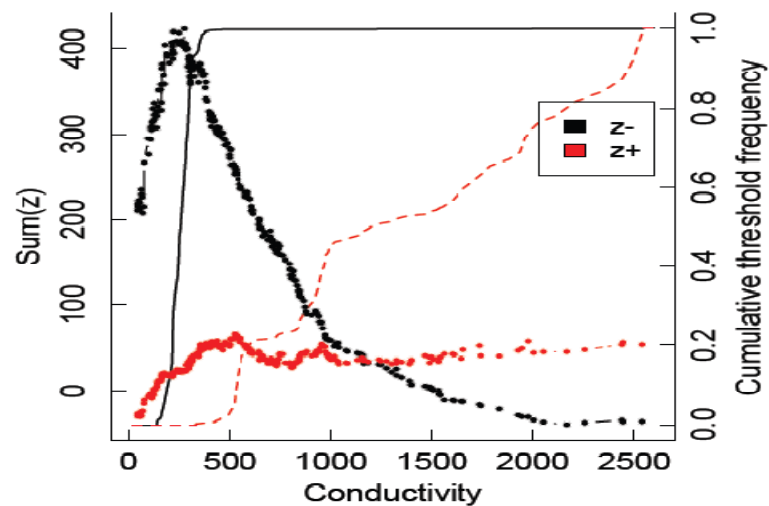
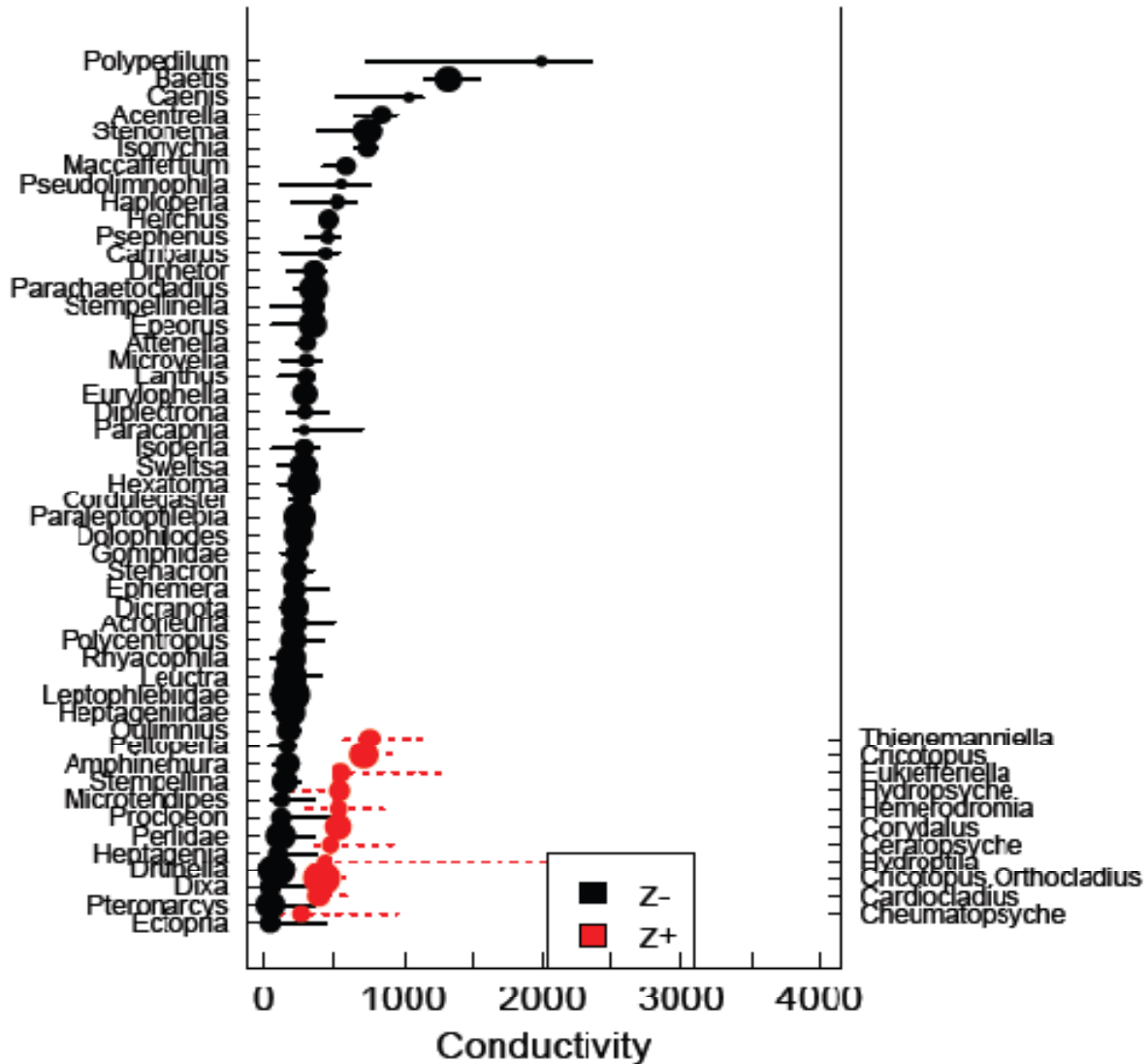


FIGURE 6. TITAN results for taxa having both high purity and reliability when run against conductivity. Points are centered on the estimated change point for each taxa, horizontal lines indicate 95% CI based on 500 bootstrap replicates, and point size is proportional to the taxa z-score.



Supplemental Material to be online

(to accompany Bernhardt et al. “How many mountains can we mine...”)

This Supplement Includes two figures (Figures 1 and 2) and one table (Table 2) that are directly referenced in the text as well as a detailed description of sensitivity analyses that we performed to test the robustness of our TITAN estimates. The section on sensitivity analyses is referred to in the present manuscript as “SI Section 2”

Figure Headings

Supplemental Figure 1: Abundance patterns for individual taxa determined to respond significantly and negatively to the extent of surface mining in their catchment.

Supplemental Figure 2: Abundance patterns for individual macroinvertebrate taxa that evidenced a positive response to the extent of surface mining in their catchments.

Figure 1 Part 1

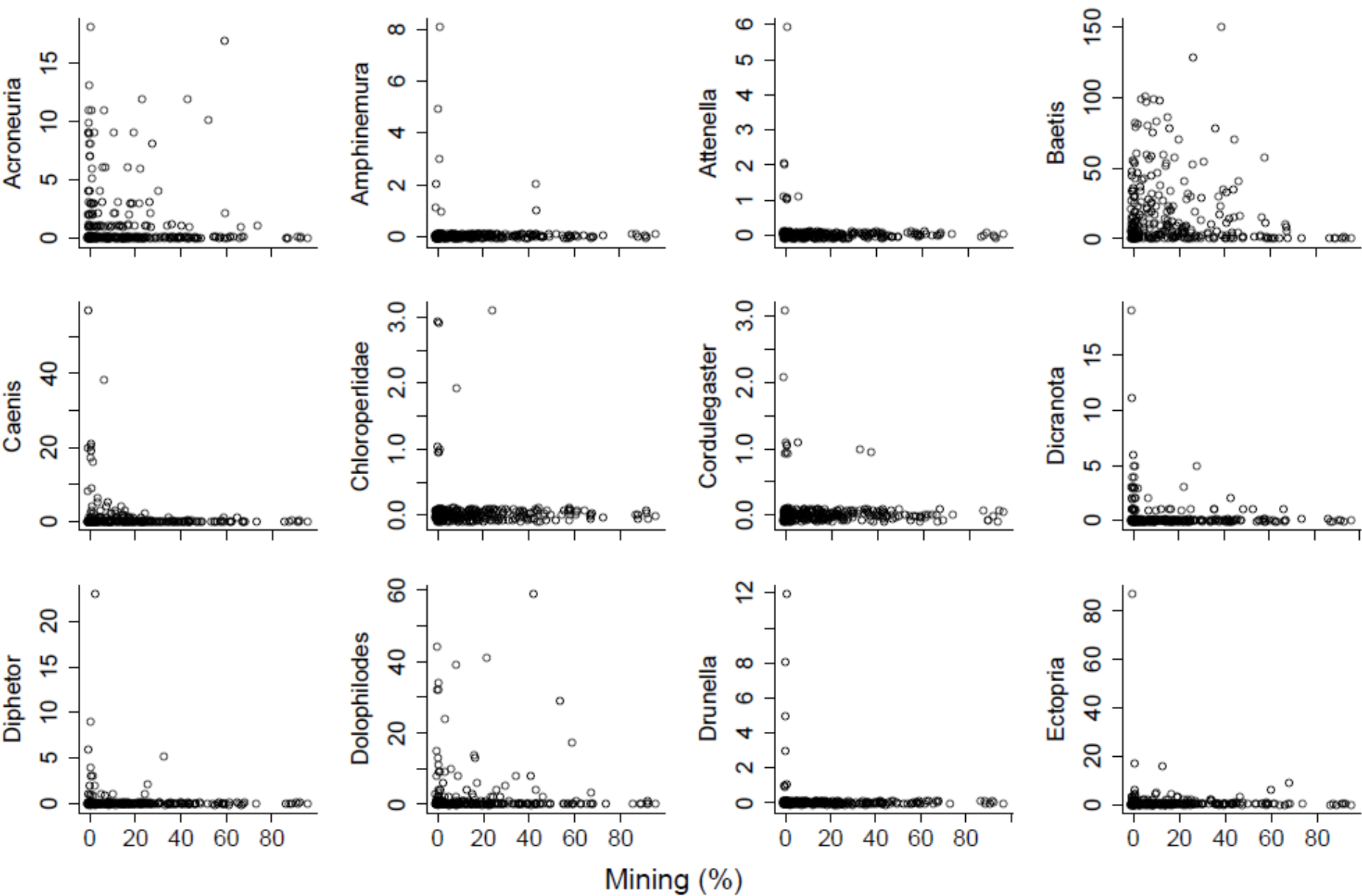


Figure 1 Part 2

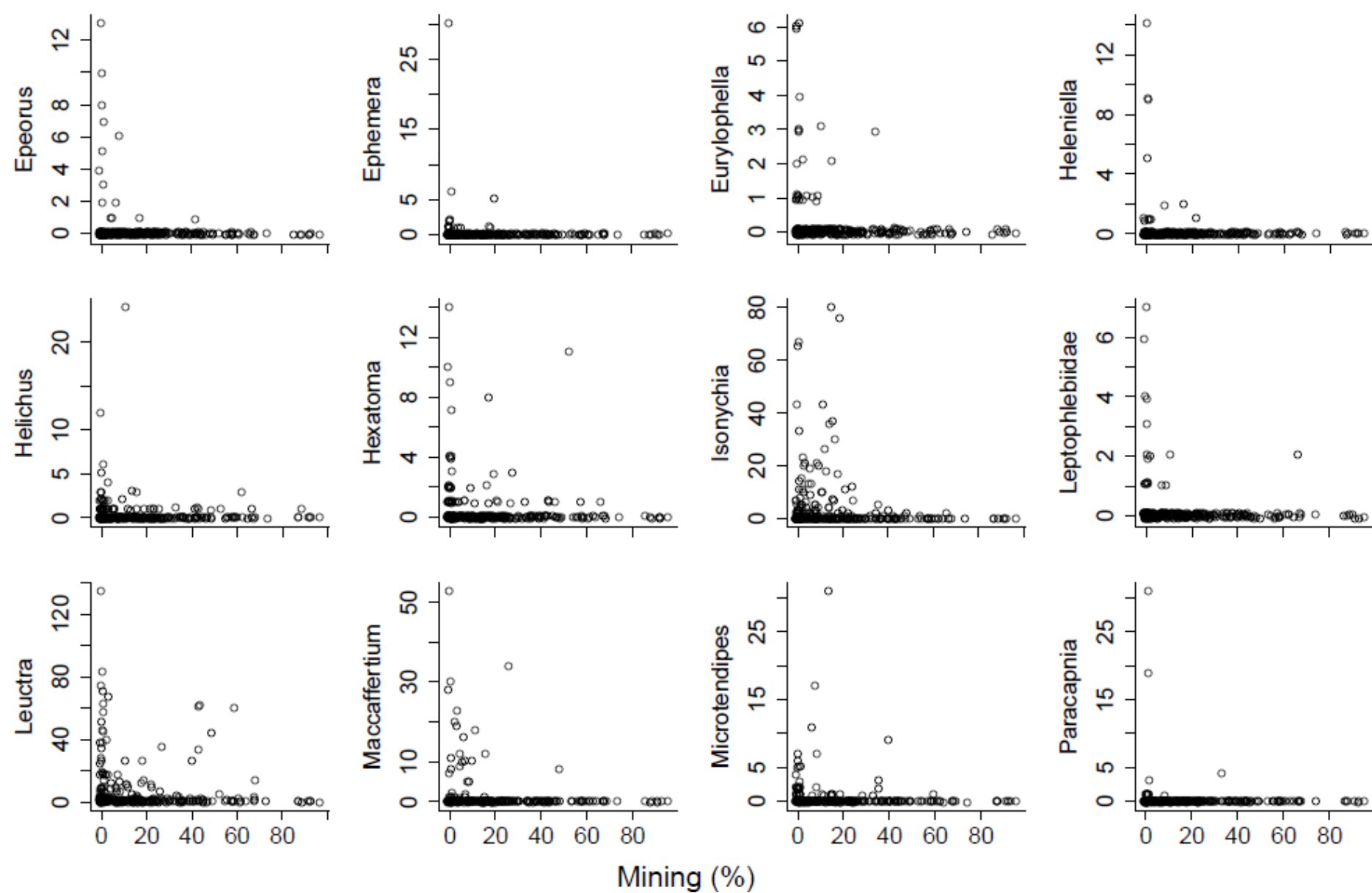


Figure 1 Part 3

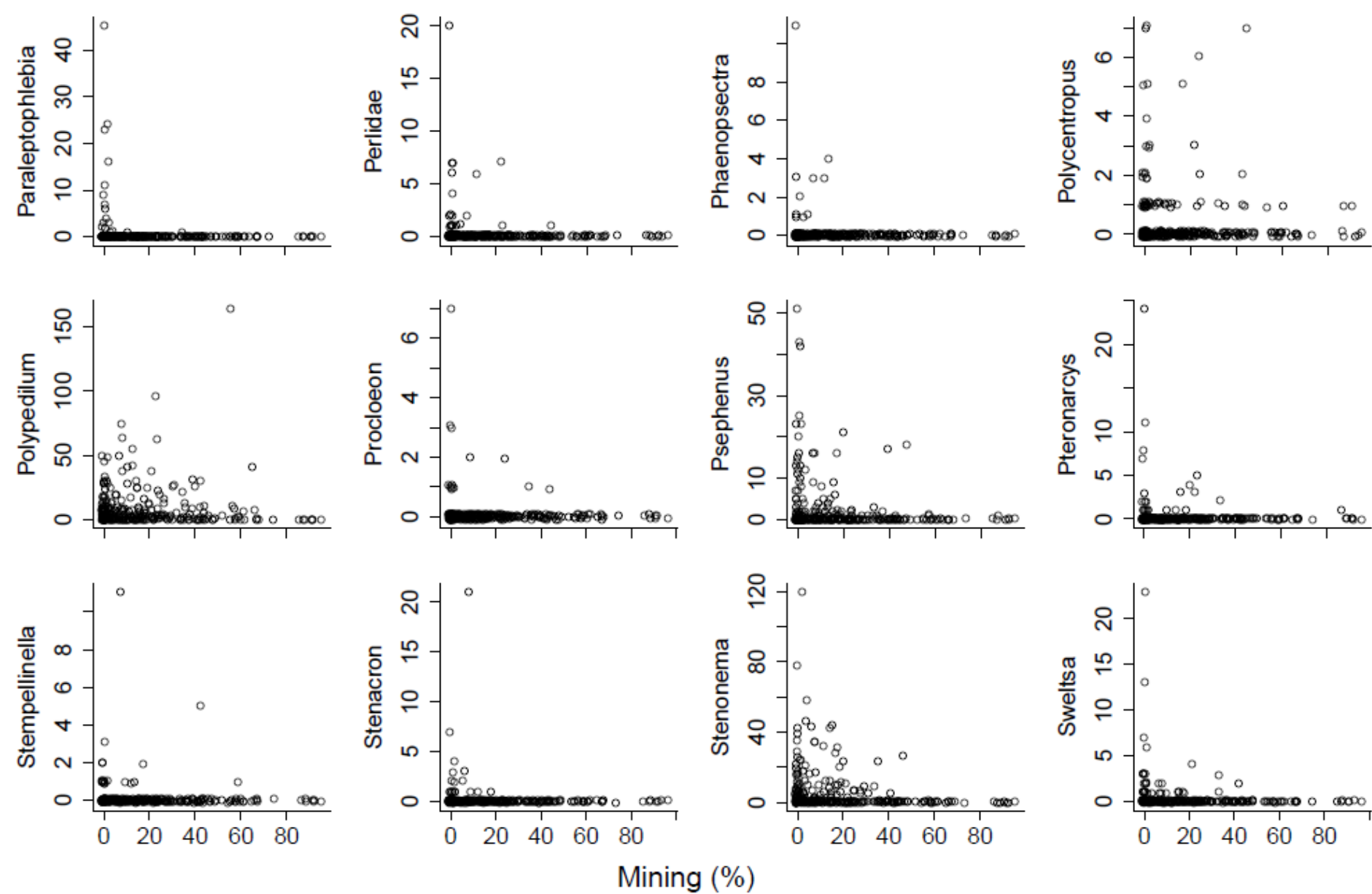


Figure 1 Part 4

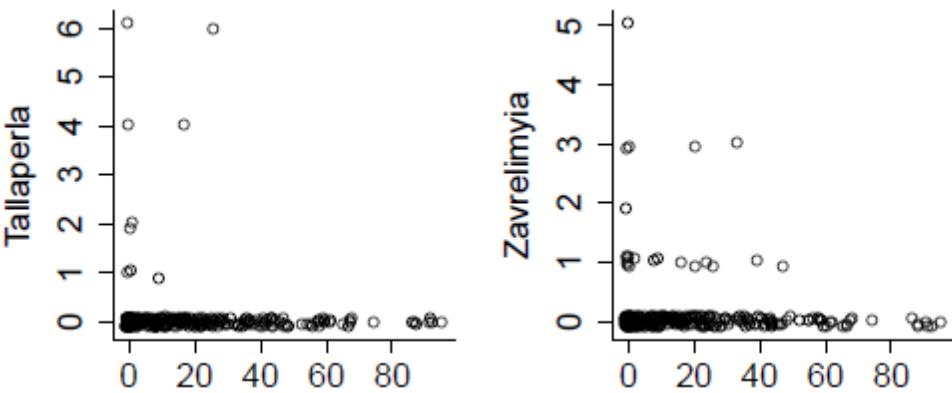
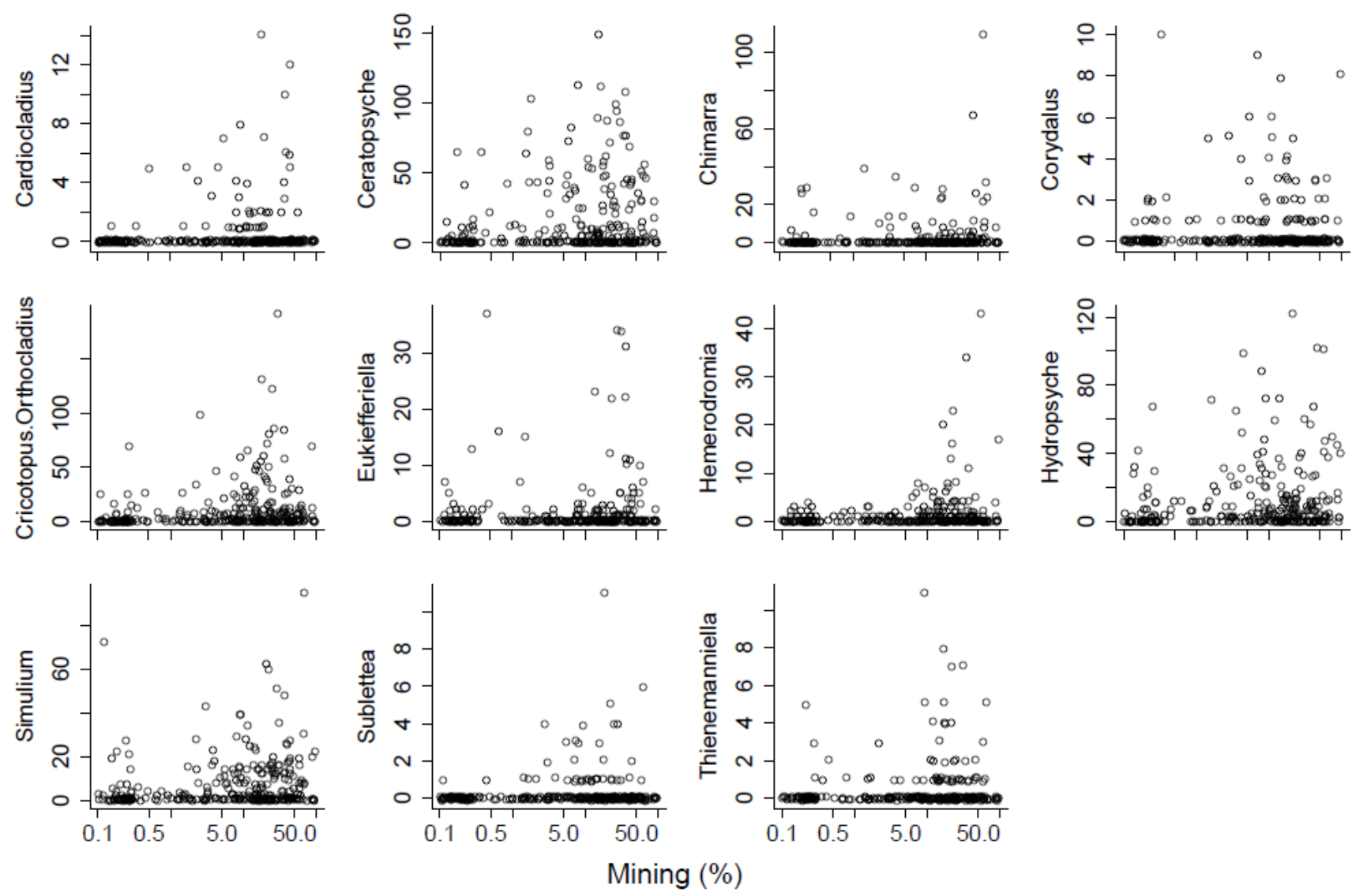
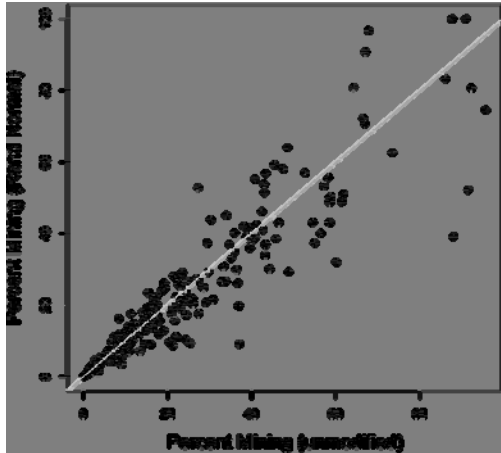


Figure 2



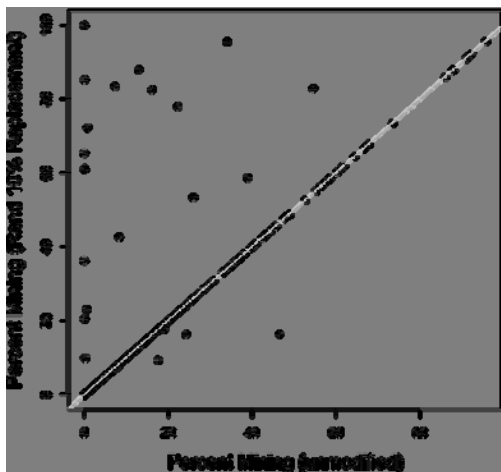
SI Section 2: Sensitivity Analyses with TITAN

Because we do not yet have estimates of the precision of our areal estimates of surface mining activity, we performed a series of sensitivity analyses with TITAN to determine whether our estimates of a mining threshold were robust to several types of possible error in surface mining estimates. We introduced error to the dataset using 3 different approaches.



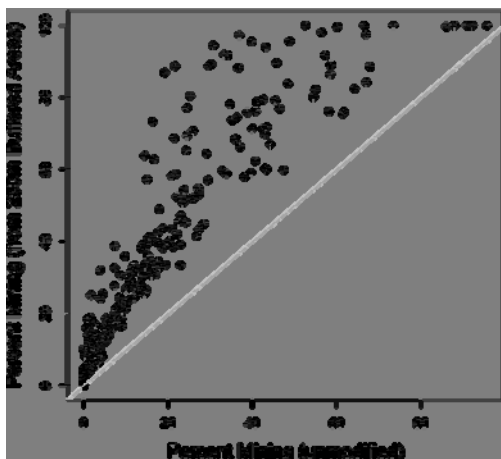
Method I: Random inflation/deflation of %mining (Figure 3)

We created a vector of values from random normal distribution ($\mu = 10$, $sd = 3$) equal in length to %mining gradient and then divided vector by 10 (to give values from -1 to 1, centered around 0). We multiplied this vector value by %mining and summed with %mining. This introduces random scatter into the %mining estimates, with the scatter increasing proportional to the absolute %mining value.



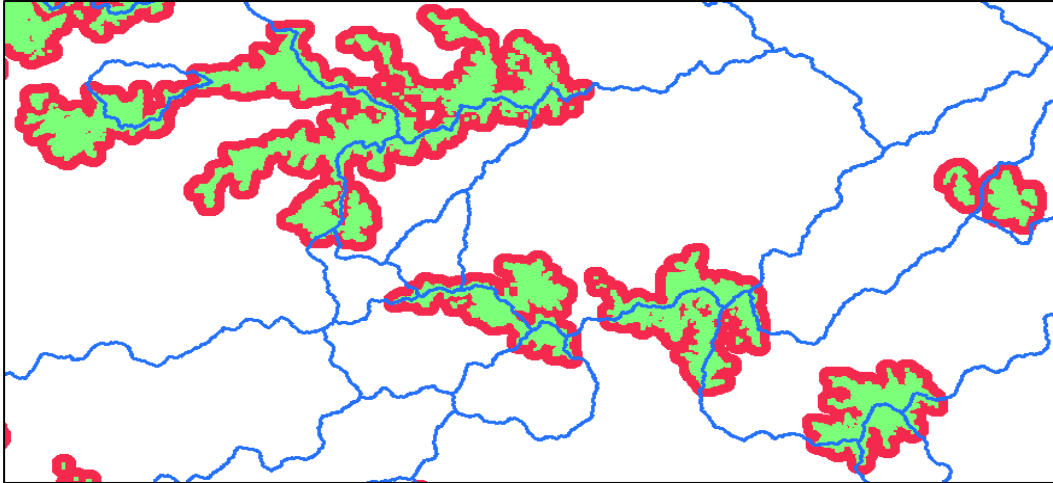
Method II: Replacement of 10% of data w/ random values (Figure 4)

We randomly selected 10% of the total observations and assigned them a random %mining value between 0-100%



Method III: 250m Buffer around all mined areas (Figure 5)

We assume that the largest uncertainty in the satellite imagery processing is the accuracy in determining the the perimeter of mined areas. Based on the geometry and total area of each watershed, as well as the geometry of the mined area within or near the watershed, uncertainty at the edge of mined areas can impact each watershed differently. We added 250m buffers (~8pixels) to the edge of every mined area (Figure 6), recalculated %mining within each watershed, and re-ran TITAN with these values.



Supplemental Figure 6. Example of buffered mine delineations. Green = SkyTruth Mining extent; Red = Buffered extension of mining delineation; Blue lines = watershed boundaries.

We found that TITAN results are robust when we introduce a moderate amount of random variation in the %mining values (Method 1, Supplemental Table 1, Supplemental Figure 7). The estimated change point value and CI are very similar to non-modified result (Supplemental Table 1).

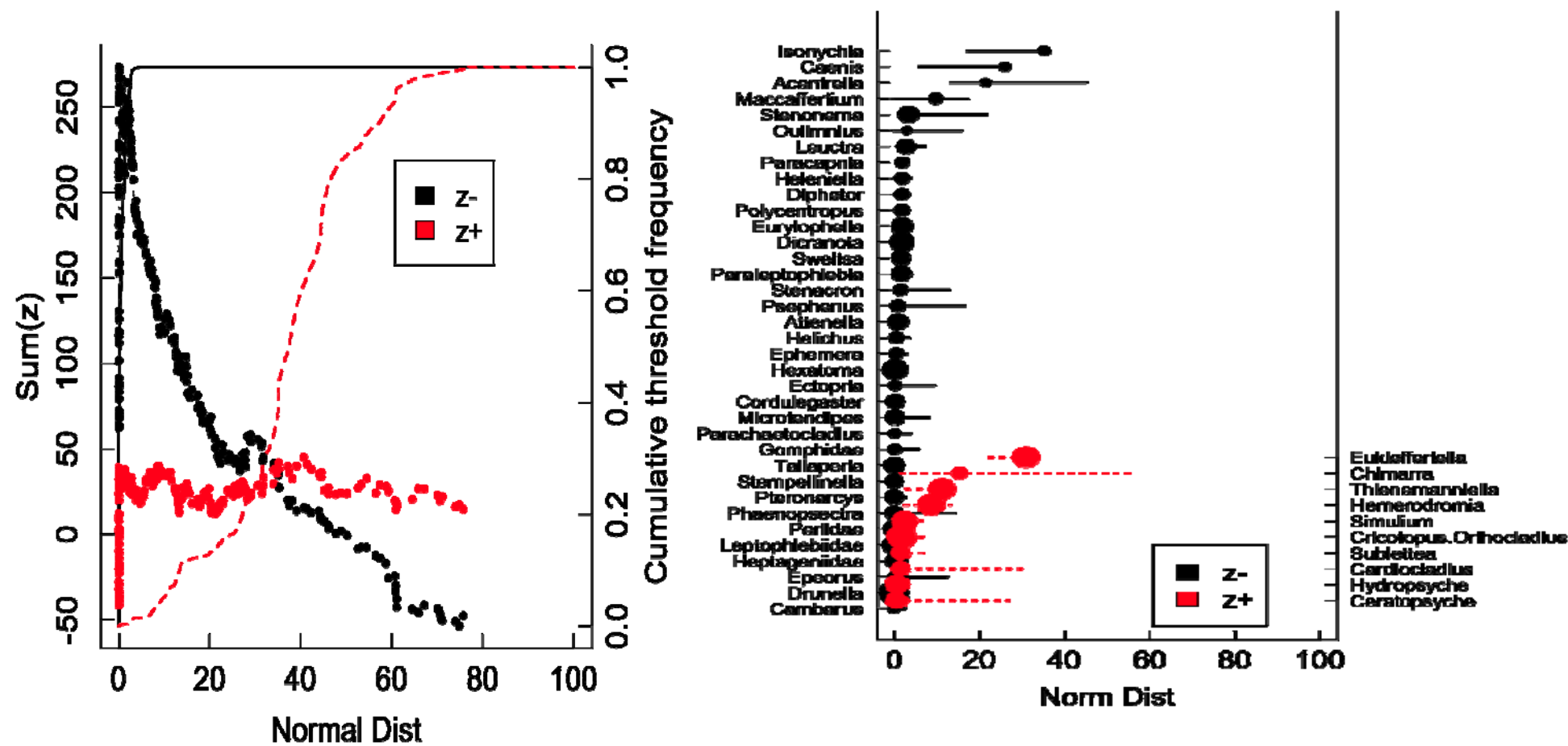
Supplemental Table 1. Change point values (+/- 95% bootstrap CI) for each TITAN run.

		Change Point	Lower 95% CI	Upper 95% CI
No Modifications				
	sumz-	1.28	0.00	2.43
	sumz+	63.08	15.36	67.47
Random Change 10% Sites				
	sumz-	0.04	0.00	2.06
	sumz+	65.45	27.01	91.27
Normal Distribution Modifier				
	sumz-	0.06	0.00	2.36
	sumz+	41.04	10.09	61.02
Buffered Areas by 250m				
	sumz-	4.66	0.34	11.85
	sumz+	100.00	59.69	100.00

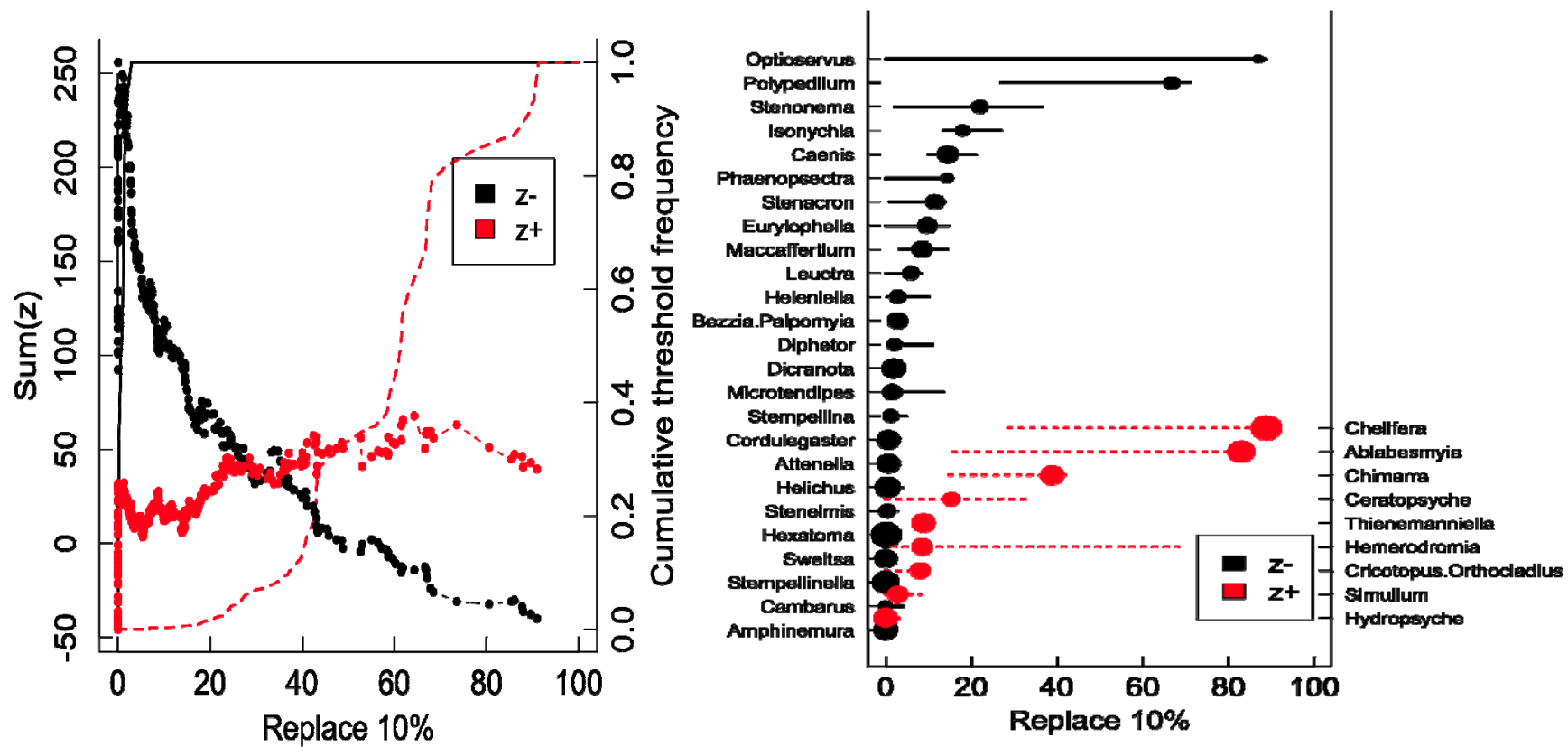
Similarly, when we replaced 10% of the observations with a random % mining value (Method 2), the overall community response value remains unchanged (Supplemental Table 1) but the number of taxa responding negatively decreases. (Supplemental Figure 8). This is likely because the random reassignment led to assigning rare taxa found only at a small number of unmined sites to some mined sites. This reassignment can introduce enough uncertainty in the patterns of abundance for rare taxa that a change point for that taxa cannot be determined

When we introduced systematic error by increasing the size of mined areas by 250m along all edges (Method 3) we were able to increase the change point estimate and confidence interval values (Supplemental Table 1, Supplemental Figure 9). We expected the values would increase (because we added mining area without changing patterns of taxa abundance). We found this error slightly inflated the estimated change point (from 1.3 to 4.7% mining) and increased the 95% confidence interval around this estimate. While such error causes the change point to be broader, there is still a clearly defined negative response (Supplemental Figure 9).

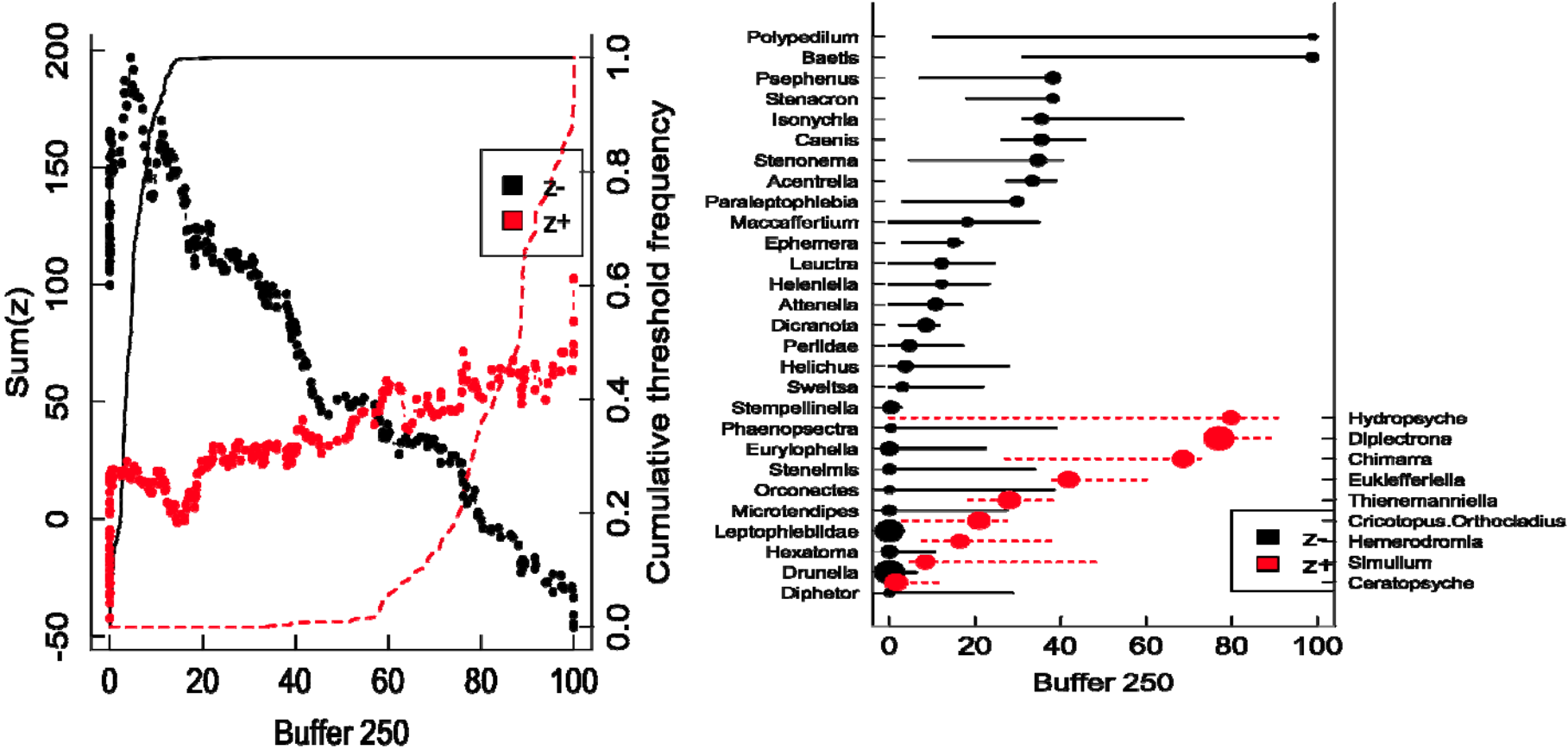
Supplemental Figure 7



Supplemental Figure 8



Supplemental Figure 9



Supplemental Table 2. Satellite image data used for this study (*p* and *r* refer to path/row location)

Landsat 5 (TM)							
p19r35	p19r34	p19r33		p18r34	p18r33		p17r33
7/3/2006	7/3/2006	7/3/2006		9/11/2005	9/11/2005		5/31/2005
9/7/1995	9/7/1995	9/7/1995		8/31/1995	8/31/1995		10/11/1995
9/8/1984	9/8/1984	9/8/1984		9/17/1984	9/17/1984		7/8/1984
Landsats 1-2 (MSS)							
p21r35		p20r35	p20r34	p20r33		p19r34	p19r33
8/20/1976		8/19/1976	8/19/1976	9/6/1976		6/7/1976	5/20/1976

Kevin Minoli/DC/USEPA/US
01/12/2011 02:13 PM

To Matthew Klasen, Christopher Hunter, Gregory Peck, Stefania
Shamet, Karyn Wendelowski
cc
bcc
Subject Fw: Any chance you have and hour or so right now?

First thoughts from Phil.

----- Forwarded by Kevin Minoli/DC/USEPA/US on 01/12/2011 02:13 PM -----

From: Philip Mancusi-Ungaro/R4/USEPA/US
To: Kevin Minoli/DC/USEPA/US@EPA
Cc: samuel.brown@epa.gov
Date: 01/12/2011 02:09 PM
Subject: Re: Any chance you have and hour or so right now?

I got through page 40. I will continue to look. (b) (5)



ATTACHMENT REDACTED - DELIBERATIVE

But here is what I have. Spruce FD 011211 clean PMU edits.doc

Karyn
Wendelowski/DC/USEPA/US
01/12/2011 02:22 PM

To Stefania Shamet
cc Christopher Hunter, Gregory Peck, John Forren, Kevin Minoli,
Margaret Passmore, Matthew Klasen
bcc
Subject Re: Spruce Jurisdictional analysis - FINAL

(b) (5)



ATTACHMENT REDACTED - DELIBERATIVE

Jurisdictional Analysis Spruce No. 1 Mine.doc

Karyn
Wendelowski/DC/USEPA/US
01/12/2011 02:43 PM

To Christopher Hunter, Matthew Klasen
cc Kevin Minoli
bcc
Subject Final Spruce jurisdictional analysis - use this one

(b) (5)



ATTACHMENT REDACTED - DELIBERATIVE

Jurisdictional Analysis Spruce No. 1 Mine.doc

**Matthew
Klasen/DC/USEPA/US**
01/12/2011 03:16 PM

To Ross Geredien
cc Christopher Hunter
bcc
Subject Re: 241A-270A Final scrubbing

OK, thanks Ross. Start taking a look at the attachment after you get an updated ref list from Marcel. Just look at the margin comments, and send me an email with the cites that **have** been incorporated into the ref list so I can delete the comment.

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-12 Compiled WVDEP and Corps RD Comment Responses.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Ross Geredien

1. 246A (ii): Says "Table XX Appendix 3". No t...

01/12/2011 03:13:46 PM

From: Ross Geredien/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 03:13 PM
Subject: 241A-270A Final scrubbing

1. 246A (ii): Says "Table XX Appendix 3". No table, just Appendix 3.
- 2.

That's it!

Ross Geredien
ORISE Fellow
EPA Office of Wetlands, Oceans, and Watersheds
202-566-1466
Geredien.ross(AT)epa.gov

Margaret
Passmore/R3/USEPA/US

01/12/2011 03:18 PM

To Stefania Shamet

cc Frank Borsuk

bcc

Subject Re: QUICK TURNAROUND -- NEED Fw: reference citations

Cutter G. A. and K. W. Bruland (1984) The marine biogeochemistry of selenium: A re-evaluation. *Limnology and Oceanography*, 29(6), 1179-1192.



CutterBrulandLO1984.pdf

ATTACHMENT IS DIGITALLY PROTECTED, CANNOT BE
ATTACHED IN ADOBE

Seems right, although it is MARINE biogeochemistry.

M

Margaret Passmore
Freshwater Biology Team
Office of Monitoring and Assessment (3EA50)
Environmental Assessment and Innovation Division
USEPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0245
(f) 304-234-0260
passmore.margaret@epa.gov

Visit our website at <http://epa.gov/reg3esd1/3ea50.htm>

Stefania Shamet

Frank -- are these yours??? can you get us the...

01/12/2011 03:13:56 PM

From: Stefania Shamet/R3/USEPA/US
To: Frank Borsuk/R3/USEPA/US@EPA
Cc: Margaret Passmore/R3/USEPA/US@EPA
Date: 01/12/2011 03:13 PM
Subject: QUICK TURNAROUND -- NEED Fw: reference citations

Frank -- are these yours??? can you get us the cites v. quickly?? thanks.

----- Forwarded by Stefania Shamet/R3/USEPA/US on 01/12/2011 03:12 PM -----

From: David Kargbo/R3/USEPA/US
To: Stefania Shamet/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 03:09 PM
Subject: Re: reference citations

(b) (5)

David M. Kargbo, PhD
Office of Environmental Innovation
Environmental Assessment and Innovation Division

USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103
Tel: 215 814-3319 / E-mail: kargbo.david@epa.gov

Stefania Shamet

Dave --- a few of your references didn't make it i...

01/12/2011 02:18:36 PM

From: Stefania Shamet/R3/USEPA/US
To: David Kargbo/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 02:18 PM
Subject: reference citations

Dave --- a few of your references didn't make it into the appendix -- probably my bad. (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

Thanks!;

Margaret
Passmore/R3/USEPA/US

01/12/2011 03:28 PM

To Stefania Shamet

cc Frank Borsuk

bcc

Subject Re: QUICK TURNAROUND -- NEED Fw: reference citations

REidel et al. 1991

(b) (5) Heres the link

<http://www.springerlink.com/content/1775762461134540/>

and full citation

Riedel GF, Ferrier DP, Sanders JG (1991) Uptake of selenium
by freshwater phytoplankton. Water Air Soil Pollut 57/58:
23-30

Margaret Passmore
Freshwater Biology Team
Office of Monitoring and Assessment (3EA50)
Environmental Assessment and Innovation Division
USEPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0245
(f) 304-234-0260
passmore.margaret@epa.gov

Visit our website at <http://epa.gov/reg3esd1/3ea50.htm>

Stefania Shamet

Frank -- are these yours??? can you get us the...

01/12/2011 03:13:56 PM

From: Stefania Shamet/R3/USEPA/US
To: Frank Borsuk/R3/USEPA/US@EPA
Cc: Margaret Passmore/R3/USEPA/US@EPA
Date: 01/12/2011 03:13 PM
Subject: QUICK TURNAROUND -- NEED Fw: reference citations

Frank -- are these yours??? can you get us the cites v. quickly?? thanks.

----- Forwarded by Stefania Shamet/R3/USEPA/US on 01/12/2011 03:12 PM -----

From: David Kargbo/R3/USEPA/US
To: Stefania Shamet/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 03:09 PM
Subject: Re: reference citations

(b) (5)

David M. Kargbo, PhD
Office of Environmental Innovation
Environmental Assessment and Innovation Division
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19103
Tel: 215 814-3319 / E-mail: kargbo.david@epa.gov

Stefania Shamet

Dave --- a few of your references didn't make it i...

01/12/2011 02:18:36 PM

From: Stefania Shamet/R3/USEPA/US
To: David Kargbo/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 02:18 PM
Subject: reference citations

Dave --- a few of your references didn't make it into the appendix -- probably my bad. (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

Thanks!;

**Matthew
Klasen/DC/USEPA/US**
01/12/2011 03:35 PM

To Ross Geredien, Julia McCarthy
cc Christopher Hunter, Marcel Tchaou
bcc
Subject Current draft of H&W RD -- for checking comment bubbles
only

Here's the current version. I sent Ross the WVDEP draft already for the same task. Please split this one up whichever way is easiest.

Again, the goal is to look only at the comment bubbles, cross-reference with Marcel's most recent reference list, and send me a list of the refs that are now in the appendix. I'll then delete the comment bubbles from the master version, and we'll be that much closer to being done. (Don't send Track Changes.)

Ignore the few substantive comment bubbles, which I'll work out.

Thanks again!

-Matt



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-12 Compiled H&W RD Comment Responses.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Jaclyn
Mcllwain/R3/USEPA/US
01/12/2011 03:37 PM

To Brian Trulear
cc Bette Conway, Evelyn MacKnight, Mark Smith, Peter Weber
bcc
Subject Re: Objections Table

I've updated the spreadsheet to include the reasons for objection that Brian gathered. There are a handful that still need reason for objection, and all non-mining permits need legal basis for objection.

Thanks!



ATTACHMENT REDACTED - DELIBERATIVE

Region 3 objections to state NPDES permits.docx

Jaclyn Mcllwain
NPDES Permits Branch (3WP41)
Water Protection Division
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103

Ph: 215.814.2713
Fax: 215.814.2302
mcllwain.jaclyn@epa.gov

Brian Trulear

FYI - I updated the objections spreadsheet to inc...

01/11/2011 04:08:30 PM

From: Brian Trulear/R3/USEPA/US
To: Evelyn MacKnight/R3/USEPA/US@EPA, Jaclyn Mcllwain/R3/USEPA/US@EPA
Cc: Peter Weber/R3/USEPA/US, Mark Smith/R3/USEPA/US@EPA, Bette Conway/R3/USEPA/US@EPA
Date: 01/11/2011 04:08 PM
Subject: Objections Table

FYI - I updated the objections spreadsheet to include reasons for objections for the non mining permits. There were a couple with no info in PTS. I would suggest that we only include the specific objections for the non mining permits since a majority of the TE/Gen Objs were just our informal TE requests via e-mail to the permit writer.

Brian

[attachment "rptobjection_universe.xlsx" deleted by Jaclyn Mcllwain/R3/USEPA/US]

Margaret
Passmore/R3/USEPA/US

01/12/2011 03:37 PM

To Stefania Shamet

cc Frank Borsuk

bcc

Subject Re: QUICK TURNAROUND -- NEED Fw: reference citations

Looks right

HU, M. H., Y. P. YANG, J. M. MARTIN, K. YIN, AND P. J. HARRISON.
1997. Preferential uptake of Se(IV) over Se(VI) and the production
of dissolved organic Se by marine phytoplankton. *Marine
Environmental Research* 44:225-231.

Margaret Passmore
Freshwater Biology Team
Office of Monitoring and Assessment (3EA50)
Environmental Assessment and Innovation Division
USEPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0245
(f) 304-234-0260
passmore.margaret@epa.gov

Visit our website at <http://epa.gov/reg3esd1/3ea50.htm>

Stefania Shamet

Frank -- are these yours??? can you get us the...

01/12/2011 03:13:56 PM

From: Stefania Shamet/R3/USEPA/US
To: Frank Borsuk/R3/USEPA/US@EPA
Cc: Margaret Passmore/R3/USEPA/US@EPA
Date: 01/12/2011 03:13 PM
Subject: QUICK TURNAROUND -- NEED Fw: reference citations

Frank -- are these yours??? can you get us the cites v. quickly?? thanks.

----- Forwarded by Stefania Shamet/R3/USEPA/US on 01/12/2011 03:12 PM -----

From: David Kargbo/R3/USEPA/US
To: Stefania Shamet/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 03:09 PM
Subject: Re: reference citations

(b) (5)

David M. Kargbo, PhD
Office of Environmental Innovation
Environmental Assessment and Innovation Division
USEPA Region 3
1650 Arch Street

Philadelphia, PA 19103
Tel: 215 814-3319 / E-mail: kargbo.david@epa.gov

Stefania Shamet

Dave --- a few of your references didn't make it i...

01/12/2011 02:18:36 PM

From: Stefania Shamet/R3/USEPA/US
To: David Kargbo/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/12/2011 02:18 PM
Subject: reference citations

Dave --- a few of your references didn't make it into the appendix -- probably my bad. (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

Thanks!;

Stefania
Shamet/R3/USEPA/US
01/12/2011 03:59 PM

To Matthew Klasen
cc
bcc
Subject App 6 mark up

Here you go.

Note that 29 and 25 were revised from what was sent earlier.



Document Withheld-FOIA(b)(5)

Appendix 6 Response to Comments 011111sds.docx

Marcel
Tchaou/DC/USEPA/US
01/12/2011 04:07 PM

To: Matthew Klasen
cc
bcc
Subject: Re: Fw: Per our discussion -- (b) (5)

I am looking for those references and Ross is helping. We have Vesper et al. 2004

Marcel K. Tchaou, Ph.D., P.E., P.H.
Environmental Engineer
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1904

Matthew Klasen

Marcel: Two more references here: Vesper et al...

01/12/2011 04:03:08 PM

From: Matthew Klasen/DC/USEPA/US
To: Marcel Tchaou/DC/USEPA/US@EPA
Date: 01/12/2011 04:03 PM
Subject: Fw: Per our discussion -- (b) (5)

Marcel: Two more references here:

Vesper et al (2005)
(Lemly 2006).

We may have already taken care of them

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 01/12/2011 04:01 PM -----

From: Stefania Shamet/R3/USEPA/US
To: Alaina DeGeorgio/R3/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA
Date: 01/12/2011 03:12 PM
Subject: Re: Per our discussion -- (b) (5)

Seriously?? You're through them all already?? You are AWESOME! Thanks!!

Alaina DeGeorgio

Stef, This is what I've come up with. Vesper et...

01/12/2011 03:02:03 PM

From: Alaina DeGeorgio/R3/USEPA/US
To: Stefania Shamet/R3/USEPA/US@EPA
Date: 01/12/2011 03:02 PM
Subject: Re: Per our discussion -- (b) (5)

Stef, This is what I've come up with.

Vesper et al (2005)
(Lemly 2006).

Thanks,


Alaina

Alaina DeGeorgio
EPA Region III
1650 Arch St.
Philadelphia, PA
(215) 814-2741

Stefania Shamet/R3/USEPA/US

Stefania
Shamet/R3/USEPA/US
01/12/2011 02:34 PM

To: Alaina DeGeorgio/R3/USEPA/US@EPA
cc

Subject: Per our discussion -- (b) (5) 

(b) (5) [Redacted]

[Redacted]

[Redacted]

**Jessica
Martinsen/R3/USEPA/US**
01/12/2011 04:08 PM

To Brian Topping
cc Brian Frazer, Jeffrey Lapp, Allison Graham, Christopher
Hunter
bcc
Subject Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc



SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc

ATTACHMENT REDACTED - DELIBERATIVE

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Nancy Stoner/DC/USEPA/US

01/12/2011 05:08 PM

To Martha Workman

cc

bcc

Subject Fw: VA - WVVa Mining Guidance Letters - Signed

Reading pile, thx
Linda Boornazian

----- Original Message -----

From: Linda Boornazian

Sent: 01/12/2011 04:54 PM EST

To: Bob Sussman; Nancy Stoner; Deborah Hanlon

Cc: Marcus Zobrist; David Evans; Gregory Peck

Subject: Fw: VA - WVVa Mining Guidance Letters - Signed

Here are the letters that were signed.

Linda Boornazian
Deputy Division Director, Water Protection Division, EPA Region 3
1650 Arch St (mail code:3WP00)
Philadelphia, PA, 19103
13th Floor, Room 121
Phone: 215--814-5423
or 215-814-2300
Fax: 215-814-2301

----- Forwarded by Linda Boornazian/R3/USEPA/US on 01/12/2011 04:52 PM -----

From: Amy Caprio/R3/USEPA/US
To: LaRonda Koffi/R3/USEPA/US@EPA, Jessica Greathouse/R3/USEPA/US@EPA, Shawn Garvin/R3/USEPA/US@EPA, Early.William@epamail.epa.gov
Cc: Stefania Shamet/R3/USEPA/US@EPA, Michael Dunn/R3/USEPA/US@EPA, Linda Boornazian/R3/USEPA/US@EPA, Jon Capacasa/R3/USEPA/US@EPA, Janice Donlon/R3/USEPA/US@EPA, Michael DAndrea/R3/USEPA/US@EPA, John Pomponio/R3/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, John Krakowiak/R3/USEPA/US@EPA, Daniel Ryan/R3/USEPA/US@EPA, Catherine Libertz/R3/USEPA/US@EPA, Evelyn MacKnight/R3/USEPA/US@EPA
Date: 01/12/2011 04:47 PM
Subject: VA - WVVa Mining Guidance Letters - Signed

Hello -

The Va and WVVa letters were signed today in light of Spruce coming out any time now.

Laronda and Jessica - please send these to your contacts in the state.

Jessica - I talked with Cathy and Laronda and we've placed you as the contact in both letters.

The hard copies will need to be sent out by whomever the contact was on the letter.

Thank you all for your assistance to get these out!

Am attaching word and pdfs.



Davis.Mining [1.12.11].pdf



Huffman.mining [1.12.11].pdf



ATTACHMENT REDACTED - DELIBERATIVE

Huffman.WVA Mining Guidance Letter [1.12.11].docx



ATTACHMENT REDACTED - DELIBERATIVE

Davis.VA Mining Letter [1.12.11].docx

Thanks -
Amy

Executive Assistant
U.S. EPA Region III
1650 Arch Street (3DA00)
Philadelphia, PA 19103

p: 215.814.2156
e: caprio.amy@epa.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JAN 12 2011

The Honorable Randy C. Huffman
Secretary
West Virginia Department of Environmental Protection
601-57th Street
Charleston, West Virginia 25304

Dear Secretary Huffman:

Thank you for your letter of October 19, 2010 to the U.S. Environmental Protection Agency (EPA) regarding implementation of West Virginia's Permitting Guidance for Surface Coal Mining Operations to Protect West Virginia's Narrative Water Quality Standards (West Virginia Guidance).

EPA agrees that it is important to resolve any legal or policy differences regarding implementation of the Clean Water Act (CWA) in West Virginia that may exist between the EPA, Region III and the West Virginia Department of Environmental Protection (WVDEP). We are encouraged that, as a policy and legal matter, West Virginia's Guidance acknowledges that the reasonable potential of discharges from surface coal mining operations to cause or contribute to violations of narrative water quality standards should be considered and addressed as part of the National Pollutant Discharge Elimination System (NPDES) permitting process.

Based upon our initial review of the West Virginia Guidance, the accompanying justification and background document (justification document), and from positions asserted in the recent lawsuit filed by WVDEP in the U.S. District Court for the Southern District of West Virginia (*Huffman v. U.S. Environmental Protection Agency*), it appears that there may remain significant differences regarding the appropriate roles and responsibilities of EPA and WVDEP in implementing the CWA.

We appreciate your offer to continue meeting with us to resolve these differences. The U.S. Department of Justice advised EPA that the meetings should be conducted within the context of confidential settlement negotiations.

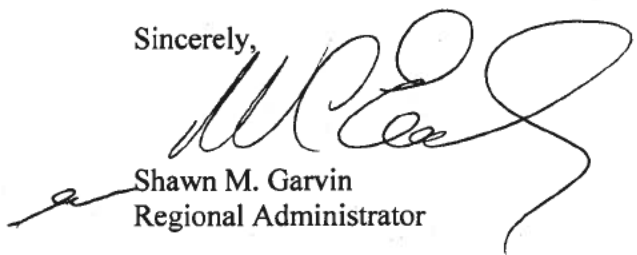
Initially, EPA proposes a technical-level meeting which would provide an opportunity for WVDEP to clarify the technical issues and the application of the West Virginia Guidance. After these issues have been clarified, we recommend a policy-level meeting. The policy-level meetings would identify and resolve any legal and policy differences



In the interim, EPA's NPDES and water quality staffs will continue to work with your staff on the review of NPDES permits and water quality issues. The West Virginia Guidance and the justification document correctly note that West Virginia has been authorized to implement the NPDES program in West Virginia. Under the CWA, state law does not supplant federal law, and EPA retains oversight authority. EPA has and will continue to review NPDES permits pursuant to Section 402(d) of the CWA (33 U.S.C. § 1342(d)) and exercise other oversight responsibilities assigned to EPA by federal law.

If you have any questions, please do not hesitate to contact me or have your staff contact Mrs. Jessica Greathouse, EPA's West Virginia Liaison, at (304) 234-0275.

Sincerely,



Shawn M. Garvin
Regional Administrator





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JAN 12 2011

Mr. Jack T. Davis, Director
Division of Mined Land Reclamation
Department of Mines, Minerals and Energy
P.O. Drawer 900
Big Stone Gap, Virginia 24219

Dear Director Davis:

Thank you for forwarding Virginia's Department of Mines, Minerals and Energy, Division of Mined Land Reclamation's (DMLR) Guidance Memorandum No. 32-10 (September 2, 2010) addressing *Permitting Guidance for Surface Coal Mining Operations to Protect Virginia's Narrative Water Quality Standards* (Virginia Surface Mining Guidance).

The U.S. Environmental Protection Agency (EPA) agrees that the reasonable potential of discharges from surface coal mining operations to cause or contribute to violations of narrative water quality standards should be considered and addressed as part of the National Pollutant Discharge Elimination System (NPDES) permitting process. However, narrative water quality criteria play an important gap-filling role by defining water conditions that must be protected and maintained, especially where there is no applicable numeric criterion for an impairing parameter or set of parameters.

In June 2010, EPA presented the outlines of a potential approach to assist in the interpretation of the narrative water quality criteria all of the interested Region III states. In addition, EPA staff has reviewed the September 2, 2010 Virginia Surface Mining Guidance. Our initial review has identified a number of questions and potential concerns related to the methodology for a reasonable potential analysis, methodology and timing for incorporating appropriate water quality-based effluent limits, and how total maximum daily loads (TMDL) will be considered.

EPA proposes a technical-level meeting or conference call which would provide an opportunity for DMLR staff to clarify the technical questions and the application of the Virginia Surface Mining Guidance. We envision this meeting to include DMLR and EPA water quality standards and assessment program staff, and biologists. We will contact your office to schedule this meeting.

EPA issued a specific objection to NPDES Permit No. VA 1003841, A&G Coal Company, Ison Rock Ridge, Callahan Creek Watershed (submitted to EPA September 3, 2010), which purports to implement the Virginia Surface Mining Guidance. It is not clear to EPA that this permit reflects Virginia's Surface Mining Guidance. Therefore, the permit and our comments focus on consistency with the Callahan Creek TMDL. EPA will continue to work with DMLR staff on resolving issues related to NPDES Permit No. VA 1003841.

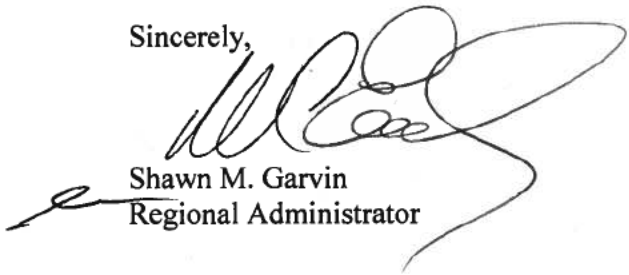


EPA has and will continue to review NPDES permits pursuant to Section 402(d) of the Clean Water Act (CWA) (33 U.S.C. § 1342(d)) consistent with the CWA and EPA's regulations. On April 1, 2010, EPA issued interim final guidance to the regional offices titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order* (SCM Guidance). The SCM Guidance addresses a variety of factors that EPA regional offices should take into account when considering whether permits for discharges associated with Appalachian surface coal mining projects are meeting the requirements of the CWA and implementing regulations.

Additionally, on April 1, 2010, EPA released two Office of Research and Development (ORD) reports: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *a Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* (Benchmark Conductivity Study). The ORD reports have been submitted to the EPA Science Advisory Board (SAB) for review and also are available to the public. The SAB has posted draft comments on the Benchmark Conductivity Study on its website. In the interim, EPA views the reports as providing information, along with published, peer-reviewed scientific literature, that may inform permit reviews.

If you have any questions, please do not hesitate to contact me or have your staff contact Mrs. Jessica Greathouse, EPA's West Virginia Liaison, at (304) 234-0275.

Sincerely,



Shawn M. Garvin
Regional Administrator



Gregory Peck/DC/USEPA/US

01/12/2011 05:10 PM

To Nancy Stoner

cc

bcc

Subject Final Draft PR

Subject to change?



ATTACHMENT REDACTED - DELIBERATIVE

Spruce Draft Press Release.docx

To "Nancy Stoner"
cc
bcc
Subject Fw: Spruce Materials

From: Betsaida Alcantara
Sent: 01/12/2011 05:08 PM EST
To: Nancy Stoner; Arvin Ganesan; Bob Sussman; Gregory Peck; Jordan Dorfman; "Travis Loop" <tloop@chesapeakebay.net>
Subject: Spruce Materials

ATTACHMENTS REDACTED - DELIBERATIVE



[Spruce External qs and as.doc](#) [Spruce Internal qs and as.docx](#) [Spruce Talking Points.docx](#) [Spruce Press Release.docx](#)

[illegible]

Gregory Peck/DC/USEPA/US
01/12/2011 05:17 PM

To Matthew Klasen, Karyn Wendelowski, Christopher Hunter,
Kevin Minoli
cc
bcc
Subject *Confidential: Fw: Spruce Materials

Final draft communications documents. Please review for major errors if you have an opportunity.
Please don't distribute - we'll have final materials in the morning.

Thanks.

----- Forwarded by Gregory Peck/DC/USEPA/US on 01/12/2011 05:14 PM -----

From: Betsaida Alcantara/DC/USEPA/US
To: Nancy Stoner/DC/USEPA/US@EPA, Arvin Ganesan/DC/USEPA/US@EPA, Bob
Sussman/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Jordan
Dorfman/DC/USEPA/US@EPA, "Travis Loop" <tloop@chesapeakebay.net>
Date: 01/12/2011 05:08 PM
Subject: Spruce Materials

(b) (5)



Thanks



Spruce External qs and as.doc



Spruce Internal qs and as.docx



Spruce Talking Points.docx



Spruce Press Release.docx

ATTACHMENTS REDACTED - DELIBERATIVE

**Matthew
Klasen/DC/USEPA/US**
01/12/2011 05:42 PM

To Christopher Hunter, Ross Geredien, Julia McCarthy, Marcel
Tchaou
cc Stefania Shamet
bcc
Subject Compiled Responses to Comments

Chris, Ross, Julia, and Marcel:

I'll leave it up to you on how to best split it up. Looks like 69 reference citation comments that we'll need to work through.

(Ross: Check the Stephen / Stephan thing again. I see it both ways, and the ORD conductivity report says Stephan.)

Either way, we should plan to finalize (PDF) both the response to comments and ref appendix first thing tomorrow (not tonight)

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

Appendix 6 Response to Comments 011211.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Nancy Stoner/DC/USEPA/US
01/12/2011 05:49 PM

To rock.salt@us.army.mil, "Kelley, Moira L Ms CIV USA ASA
CW"
cc
bcc
Subject *Confidential: re Spuce

Rock, Moira,

Finally got this from Betsaida in our Communications Dept for tomorrow's announcement on Spruce. It is not yet finally approved, but that won't happen until tomorrow morning, and I want to give you as much lead time as I can. It is close hold, as is the date for the announcement. I'm in my office if you have questions about it. thanks 202-564-5066

Nancy



ATTACHMENT REDACTED - DELIBERATIVE

Spruce Press Release.docx

**Matthew
Klasen/DC/USEPA/US**

01/12/2011 06:21 PM

To Gregory Peck

cc

bcc

Subject My thoughts on Q&A

Release looks good. Because these Q&As will be public, thought I'd weigh in. The first edit is changing something that may be of concern to OGC, too.



ATTACHMENT REDACTED - DELIBERATIVE

Spruce External qs and as - mk.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

**Matthew
Klasen/DC/USEPA/US**

01/12/2011 07:07 PM

To Gregory Peck, Christopher Hunter, Karyn Wendelowski,
Kevin Minoli

cc

bcc

Subject Final Spruce FR notice

For everyone's records and for signature tomorrow AM (package is complete).

This reflects the recent edits (b) (5)

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-13 Final Spruce FD FR Notice.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Vickie Reed/DC/USEPA/US

01/12/2011 07:14 AM

To Sandy Evalenko

cc Leona Montano, Matthew Klasen

bcc

Subject Re: Fw: Updated draft Spruce FR notice -- comments by 10 am tomorrow

this is fine, but you have two heading for DATES and EFFECTIVE DATE just leave one - either will work.

Phone: (202) 564-6562

Fax: (202) 564-7322

Sandy Evalenko

[We have an urgent and sensitive FRN that our A...](#)

01/11/2011 10:38:42 PM

From: Sandy Evalenko/DC/USEPA/US
To: Vickie Reed/DC/USEPA/US@EPA, Leona Montano/DC/USEPA/US
Cc: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/11/2011 10:38 PM
Subject: Fw: Updated draft Spruce FR notice -- comments by 10 am tomorrow

We have an urgent and sensitive FRN that our AA needs to sign notice tomorrow. Do either of you have time for a quick review? We would appreciate any comments by 10 am tomorrow.

Matthew Klasen

----- Original Message -----

From: Matthew Klasen
Sent: 01/11/2011 06:19 PM EST
To: Gregory Peck; Karyn Wendelowski; Kevin Minoli; Christopher Hunter; Stefania Shamet; Brian Frazer
Cc: Macara Lousberg; Sandy Evalenko; Denise Keehner; David Evans; Tanya Code
Subject: Updated draft Spruce FR notice -- comments by 10 am tomorrow
Hi everyone,

See attached below for a draft FR notice on Spruce. We began coordination on this draft notice last night, and I've received and incorporated comments from Chris and Karyn so far.

The plan is to have Pete sign this concurrently with the FD tomorrow afternoon. Because this overlaps significantly with the text of the executive summary, I don't expect the content here to be a surprise to anyone.

Please send me any comments by **10 am tomorrow** so we can get the package ready by mid-afternoon tomorrow for Pete's signature, concurrently with the Final Determination.

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-11 Draft Spruce FD FR Notice.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

01/12/2011 09:18 PM

To Peter Silva, Nancy Stoner, Mike Shapiro

CC

bcc

Subject Spruce roll-out

4 attachments



Spruce Internal qs and as.docx Spruce External qs and as.doc Spruce Talking Points.docx



Spruce Press Release.docx

ATTACHMENTS REDACTED - DELIBERATIVE

Here is the roll-out schedule and materials for the Spruce announcement. There may be a few tweaks to the press release and I will send the final.

(b) (5)

TABLE 1

T

T

Travis Loop
Office of Water
U.S. Environmental Protection Agency
office: 202.564.0183

cell: 443.510.1571

Marcel
Tchaou/DC/USEPA/US
01/12/2011 09:30 PM

To Matthew Klasen
cc Christopher Hunter
bcc
Subject Appendix 7

Matt,
Find attached the latest version of Appendix 7 as of 1/12/2011 9:27PM



ATTACHMENT REDACTED - DELIBERATIVE

Appendix 7 FD Marcel version 1-12-2011 latest.doc

Marcel K. Tchaou, Ph.D., P.E., P.H.
Environmental Engineer
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1904

Matthew Klasen

See attached. mk

01/12/2011 08:56:26 PM

From: Matthew Klasen/DC/USEPA/US
To: Marcel Tchaou/DC/USEPA/US@EPA, Ross Geredien/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 08:56 PM
Subject: StephAn

See attached.

mk

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229[attachment "85guidelines.pdf" deleted by Marcel Tchaou/DC/USEPA/US]

**Matthew
Klasen/DC/USEPA/US**

01/13/2011 12:11 AM

To Matthew Klasen

cc


bcc

Subject Responses 12:10 am

Just in case.

mk

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780

cell (202) 380-7229  - Appendix 6 Response to Comments 011211.docx

ATTACHMENT REDACTED - DELIBERATIVE

**Matthew
Klasen/DC/USEPA/US**

01/13/2011 01:26 AM


To Matthew Klasen

cc

bcc

Subject Updated consultation summary

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780

cell (202) 380-7229  - 2011-01-13 Spruce Consultation Summary.pdf

ATTACHMENT REDACTED - DELIBERATIVE

Karyn
Wendelowski/DC/USEPA/US
01/13/2011 07:31 AM

To Christopher Hunter
cc Gregory Peck
bcc
Subject Fw: Final edits - see pp 98-99 and WAC Letter

Chris - these are the edits I was thinking of on the last page

----- Forwarded by Karyn Wendelowski/DC/USEPA/US on 01/13/11 07:30 AM -----

Final edits - see pp 98-99 and WAC Letter

Gregory Peck to: Christopher Hunter, Karyn Wendelowski, Kevin
Minoli, Matthew Klasen

01/12/11 05:07 PM



ATTACHMENT REDACTED - DELIBERATIVE

Spruce FD - see comments on pp98-99.doc

WAC letter



Final WAC 404 permit veto letter.pdf



January 12, 2011

Chair Nancy Helen Sutley
Council on Environmental Quality
730 Jackson Place, N.W.
Washington, D.C. 20503

Dear Chair Sutley:

We are writing to ask you to oppose the U.S. Environmental Protection Agency's (EPA) unprecedented threat to veto a properly issued, valid Clean Water Act (CWA) Section 404 permit for Mingo Logan's Spruce No. 1 surface mine. If EPA is allowed to revoke this permit, every similarly valid Section 404 permit held by any entity — businesses, public works agencies and individual citizens — will be in increased regulatory limbo and potentially subject to the same unilateral, after-the-fact revocation. The implications could be staggering, reaching all areas of the U.S. economy including but not limited to the agriculture, home building, mining, transportation and energy sectors.

The CWA Section 404 regulatory program annually authorizes approximately \$220 billion in economic activity. EPA's threatened revocation of the Spruce permit will chill investment and job creation by creating an uncertain regulatory environment in which businesses and citizens will no longer be able to rely on valid Section 404 permits.

That EPA could revoke the Spruce permit, given the circumstances of its issuance, only heightens the uncertainties that will beset all permit holders if EPA carries out its threat to veto the Spruce permit. The Spruce permit was issued under the Clean Water Act (CWA) in 2007 after an extensive 10-year review, including the preparation of a multi-million dollar Environmental Impact Statement. EPA fully participated in the comprehensive permitting process and chose not to elevate or veto the permit prior to its issuance. Mingo Logan has abided by every requirement of the permit; EPA has never claimed otherwise. Nevertheless, nearly three years after the permit was issued and work had commenced, EPA asked the Corps to use its permit oversight authority to suspend or revoke the permit. But the Corps, after careful review, found no grounds to revoke or modify the permit.

Since the CWA was enacted in 1972, EPA has never revoked a previously issued, valid CWA Section 404 permit. The plain language of Section 404(c) does not authorize EPA to take any action once a permit has been issued. EPA's threatened

action has no legal foundation, is not warranted on the facts and will chill investments and job creation across America.

The undersigned entities will bear the consequences of the precedent setting action of an after-the-fact veto. Accordingly, we would like to meet with you promptly so that you have a full understanding of the economic, policy and legal effects that will surely follow if EPA is allowed to destroy the legal protections of a valid 404 permit. We will call your office to schedule a meeting as soon as possible. Thank you for your prompt attention to this matter.

Sincerely,
Members of Water Advocacy Coalition

American Farm Bureau Federation
American Road and Transportation Builders Association
Ball Clay Producers Association
The Fertilizer Institute
Foundation for Environmental and Economic Progress
Industrial Minerals Association – North America
International Council of Shopping Centers
International Diatomite Producers Association
National Association of Manufacturers
National Cattlemen's Beef Association
National Council of Farmer Cooperatives
National Industrial Sand Association
National Mining Association
National Multi-Housing Council
National Realtors Association
National Stone Sand and Gravel Association
Public Lands Council
Southern Crop Production Association
Western Business Roundtable
United Egg Producers

CC: The Honorable Lisa P. Jackson, Administrator, United States Environmental Protection Agency
The Honorable Jo-Ellen Darcy, Assistant Secretary of the Army for Civil Works
The Honorable Jacob J. Lew, Director, Office of Management and Budget
The Honorable Cass R. Sunstein, Administrator, Office of Information and Regulatory Affairs, OMB

**Matthew
Klasen/DC/USEPA/US**

01/13/2011 08:34 AM

To Christopher Hunter

cc

bcc

Subject Appendix 6 doc and PDF

Here ya go! Will check w/ Greg on the consultation summary now.

mk



ATTACHMENT REDACTED - DELIBERATIVE

Spruce No 1 FD Appendix 6.pdf Appendix 6 Response to Comments 011311.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Michael Dunn/R3/USEPA/US

01/13/2011 09:10 AM

To Regina Poeske

cc

bcc

Subject Fw: Final Spruce Materials

FYI:

Looks like all your hard work is being finalized today!

Michael Dunn
Environmental Assessment and Innovation Division
USEPA Mid-Atlantic Region 3
215-814-2712
dunn.michael@epa.gov

----- Forwarded by Michael Dunn/R3/USEPA/US on 01/13/2011 09:09 AM -----

From: Jessica Greathouse/R3/USEPA/US
To: Shawn Garvin/R3/USEPA/US@EPA, William Early/R3/USEPA/US, John Pomponio/R3/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA, Michael DAndrea/R3/USEPA/US@EPA, Janice Donlon/R3/USEPA/US@EPA, Catherine Libertz/R3/USEPA/US@EPA, Michael Kulik/R3/USEPA/US@EPA
Date: 01/13/2011 09:00 AM
Subject: Fw: Final Spruce Materials

Jessica H. Greathouse
State and Congressional Liaison
U.S. Environmental Protection Agency
(304) 224-3181

----- Forwarded by Jessica Greathouse/R3/USEPA/US on 01/13/2011 09:02 AM -----

From: Arvin Ganesan/DC/USEPA/US
To: "Jessica Greathouse" <Greathouse.Jessica@epamail.epa.gov>
Date: 01/13/2011 08:51 AM
Subject: Fw: Final Spruce Materials

Sent from my Blackberry Wireless Device
Betsaida Alcantara

----- Original Message -----

From: Betsaida Alcantara
Sent: 01/13/2011 08:38 AM EST
To: Arvin Ganesan; Bob Sussman; Gregory Peck; Jordan Dorfman; Nancy Stoner; "Travis Loop" <tloop@chesapeakebay.net>; Stephanie Owens; Dru Ealons
Subject: Final Spruce Materials

Team,
Here are the updated and final materials.



FINAL Spruce Talking Points.docx



FINAL Spruce External qs and as.docx



FINAL Spruce Internal qs and as.docx



FINAL Spruce Press Release.docx

ATTACHMENTS REDACTED - DELIBERATIVE

Donna Heron/R3/USEPA/US
01/13/2011 10:23 AM

To Shawn Garvin, Michael DAndrea, Daniel Ryan, Janice Donlon
cc John Pomponio, Jeffrey Lapp, John Forren, Jessica Martinsen, Jessica Greathouse, Catherine Libertz, David Rider, Bonnie Lomax, Stefania Shamet, Michael Dunn
bcc
Subject Fw: Final Spruce Materials

----- Forwarded by Donna Heron/R3/USEPA/US on 01/13/2011 10:19 AM -----

From: Michael Kulik/R3/USEPA/US
To: Terri-A White/R3/USEPA/US@EPA, Roy Seneca/R3/USEPA/US@EPA, Bonnie Smith/R3/USEPA/US, Donna Heron/R3/USEPA/US@EPA, David Sternberg/R3/USEPA/US@EPA
Date: 01/13/2011 09:39 AM
Subject: Fw: Final Spruce Materials

Press release is to go live between 10 and 11 today. (b) (5)
Any media contacts go to Betsaida and Jalil Isa.

--Mick

----- Forwarded by Michael Kulik/R3/USEPA/US on 01/13/2011 09:37 AM -----

From: Betsaida Alcantara/DC/USEPA/US
To: Michael Kulik/R3/USEPA/US@EPA
Date: 01/13/2011 09:11 AM
Subject: Fw: Final Spruce Materials

here you go, note the internal v external qs and as

----- Forwarded by Betsaida Alcantara/DC/USEPA/US on 01/13/2011 09:10 AM -----

From: Betsaida Alcantara/DC/USEPA/US
To: Arvin Ganesan/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Jordan Dorfman/DC/USEPA/US@EPA, Nancy Stoner/DC/USEPA/US@EPA, "Travis Loop" <tloop@chesapeakebay.net>, Stephanie Owens/DC/USEPA/US@EPA, Dru Ealons/DC/USEPA/US@EPA
Date: 01/13/2011 08:38 AM
Subject: Final Spruce Materials

Team,
Here are the updated and final materials.



FINAL Spruce Talking Points.docx



FINAL Spruce External qs and as.doc



FINAL Spruce Internal qs and as.docx



FINAL Spruce Press Release.docx

ATTACHMENTS REDACTED - DELIBERATIVE

Joy Gillespie/R3/USEPA/US

01/13/2011 11:00 AM

To Alaina McCurdy, Carrie Traver, Gregory Gies, Jaclyn
McIlwain, Jennifer Fulton, Mark Douglas, Stephanie Chin
cc Jeffrey Lapp, John Forren

bcc

Subject Rescheduled: draft 404 Q&A discussion (Jan 18 02:30 PM
EST in 12th floor, Rm 223)



Document Withheld-FOIA(b)(5)

404 QsandAs 080410.doc

Hi All,

Thank you so much for taking the time out of your busy schedules to review the 404 Q&As.
Looking forward to hearing your comments.

Joy

Betsaida
Alcantara/DC/USEPA/US
01/13/2011 11:26 AM

To Gregory Peck, Bob Sussman, Kevin Minoli
cc Jalil Isa
bcc
Subject response to Wall Street Journal

Q: Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

(b) (5)



----- Forwarded by Betsaida Alcantara/DC/USEPA/US on 01/13/2011 11:24 AM -----

From: "Power, Stephen" <Stephen.Power@wsj.com>
To: Betsaida Alcantara/DC/USEPA/US@EPA
Date: 01/13/2011 10:56 AM
Subject: RE: spruce release

Thanks. Silva available for interview? Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

-----Original Message-----

From: Alcantara.Betsaida@epamail.epa.gov [mailto:Alcantara.Betsaida@epamail.epa.gov]
Sent: Thursday, January 13, 2011 10:29 AM
To: Power, Stephen
Subject: spruce release

Stephen,
We're going shortly. Here;s the press release:

FOR IMMEDIATE RELEASE
January 13, 2011

EPA Halts Disposal of Mining Waste to Appalachian Waters at Proposed Spruce Mine

Agency cites irreversible damage to clean water, environment in the region

WASHINGTON - After extensive scientific study, a major public hearing in West Virginia and review of more than 50,000 public comments, the U.S. Environmental Protection Agency (EPA) today announced that it will use its authority under the Clean Water Act to halt the proposed disposal of mining waste in streams at the Mingo-Logan Coal Company's Spruce No. 1 coal mine. EPA is acting under the law and using the best science to protect water quality, wildlife and Appalachian communities, who rely on clean waters for drinking, fishing and swimming. EPA has used this Clean Water Act authority in just 12 circumstances since 1972 and reserves this authority for only unacceptable cases. This permit was first proposed in the 1990s and has been held up in the courts ever since.

"The proposed Spruce No. 1 Mine would use destructive and unsustainable mining practices that jeopardize the health of Appalachian communities and clean water on which they depend," said EPA Assistant Administrator for Water Peter S. Silva. "Coal and coal mining are part of our nation's energy future and EPA has worked with companies to design mining operations that adequately protect our nation's waters. We have a responsibility under the law to protect water quality and safeguard the people who rely on clean water."

EPA's final determination on the Spruce Mine comes after discussions with the company spanning more than a year failed to produce an agreement that would lead to a significant decrease in impacts to the environment and Appalachian communities. The action prevents the mine from disposing of the waste into streams unless the company identifies an alternative mining design that would avoid irreversible damage to water quality and meets the requirements of the law. Despite EPA's willingness to consider alternatives, Mingo Logan did not offer any new proposed mining configurations in response to EPA's Recommended Determination.

EPA believes that companies can design their operations to make them more sustainable and compliant with the law. Last year, EPA worked closely with a mining company in West Virginia to eliminate nearly 50 percent of their water impacts and reduce contamination while at the same time increasing their coal production. These are the kinds of success stories that can be achieved through collaboration and willingness to reduce the impact on mining pollution on our waters. Those changes helped permanently protect local waters, maximize coal recovery and reduce costs for the operators.

EPA's decision to stop mining waste discharges to high quality streams at the Spruce No. 1 mine was based on several major environmental and water quality concerns. The proposed mine project would have:

- * Disposed of 110 million cubic yards of coal mine waste into streams.
- * Buried more than six miles of high-quality streams in Logan County, West Virginia with millions of tons of mining waste from the dynamiting of more than 2,200 acres of mountains and forestlands.
- * Buried more than 35,000 feet of high-quality streams under mining waste, which will eliminate all fish, small invertebrates, salamanders, and other wildlife that live in them.
- * Polluted downstream waters as a result of burying these streams, which will lead to unhealthy levels of salinity and toxic levels of

selenium that turn fresh water into salty water. The resulting waste that then fills valleys and streams can significantly compromise water quality, often causing permanent damage to ecosystems and streams.

- * Caused downstream watershed degradation that will kill wildlife, impact birdlife, reduce habitat value, and increase susceptibility to toxic algal blooms.

not * Inadequately mitigated for the mine's environmental impacts by replacing streams being buried, and attempting to use stormwater ditches as compensation for natural stream losses.

Additionally, during the permitting process there was a failure to consider cumulative watershed degradation resulting from past, present, and future mining in the area.

Finally, EPA's decision prohibits five proposed valley fills in two streams, Pigeonroost Branch, and Oldhouse Branch, and their tributaries. Mining activities at the Spruce site are underway in Seng Camp Creek as a result of a prior agreement reached in the active litigation with the Mingo Logan Coal Company. EPA's Final Determination does not affect current mining in Seng Camp Creek.

Background on Clean Water Act Section 404(c)

Clean Water Act Section 404(c) authorizes EPA to restrict or prohibit placing dredged or fill material in streams, lakes, rivers, wetlands and other waters if the agency determines that the activities would result in "unacceptable adverse effects" to the environment, water quality, or water supplies. This authority applies to proposed projects as well as projects previously permitted under the Clean Water Act although EPA is not considering such action for other previously permitted projects.

With today's action, EPA has exercised its Section 404(c) authority only 13 times in its history of the CWA. EPA recognizes the importance of ensuring that its Section 404(c) actions are taken only where environmental impacts are truly unacceptable and will use this authority only where warranted by science and the law.

For a copy of the Final Determination:

http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/404c_index.cfm

Kevin Minoli/DC/USEPA/US
01/13/2011 11:36 AM

To: Gregory Peck
cc
bcc
Subject: Fw: response to Wall Street Journal

How do you want to handle these... do you want me to just defer to you to answer them unless I know you are unavailable or should I respond as soon as I see one?

----- Forwarded by Kevin Minoli/DC/USEPA/US on 01/13/2011 11:36 AM -----

From: Betsaida Alcantara/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Cc: Jalil Isa/DC/USEPA/US@EPA
Date: 01/13/2011 11:26 AM
Subject: response to Wall Street Journal

Q: Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

(b) (5)





----- Forwarded by Betsaida Alcantara/DC/USEPA/US on 01/13/2011 11:24 AM -----

From: "Power, Stephen" <Stephen.Power@wsj.com>
To: Betsaida Alcantara/DC/USEPA/US@EPA
Date: 01/13/2011 10:56 AM
Subject: RE: spruce release

Thanks. Silva available for interview? Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

-----Original Message-----

From: Alcantara.Betsaida@epamail.epa.gov [mailto:Alcantara.Betsaida@epamail.epa.gov]
Sent: Thursday, January 13, 2011 10:29 AM
To: Power, Stephen
Subject: spruce release

Stephen,

We're going shortly. Here's the press release:

FOR IMMEDIATE RELEASE
January 13, 2011

EPA Halts Disposal of Mining Waste to Appalachian Waters at Proposed Spruce Mine

Agency cites irreversible damage to clean water, environment in the region

WASHINGTON - After extensive scientific study, a major public hearing in West Virginia and review of more than 50,000 public comments, the U.S. Environmental Protection Agency (EPA) today announced that it will use its authority under the Clean Water Act to halt the proposed disposal of mining waste in streams at the Mingo-Logan Coal Company's Spruce No. 1 coal mine. EPA is acting under the law and using the best science to protect water quality, wildlife and Appalachian communities, who rely on clean waters for drinking, fishing and swimming. EPA has used this Clean Water Act authority in just 12 circumstances since 1972 and reserves this authority for only unacceptable cases. This permit was first proposed in the 1990s and has been held up in the courts ever since.

"The proposed Spruce No. 1 Mine would use destructive and unsustainable mining practices that jeopardize the health of Appalachian communities and clean water on which they depend," said EPA Assistant Administrator for Water Peter S. Silva. "Coal and coal mining are part of our nation's energy future and EPA has worked with companies to design mining operations that adequately protect our nation's waters. We have a responsibility under the law to protect water quality and safeguard the people who rely on clean water."

EPA's final determination on the Spruce Mine comes after discussions with the company spanning more than a year failed to produce an agreement that would lead to a significant decrease in impacts to the environment and Appalachian communities. The action prevents the mine from disposing of the waste into streams unless the company identifies an alternative mining design that would avoid irreversible damage to water quality and meets the requirements of the law. Despite EPA's willingness to consider alternatives, Mingo Logan did not offer any new proposed mining configurations in response to EPA's Recommended Determination.

EPA believes that companies can design their operations to make them more sustainable and compliant with the law. Last year, EPA worked closely with a mining company in West Virginia to eliminate nearly 50 percent of their water impacts and reduce contamination while at the same time increasing their coal production. These are the kinds of success stories that can be achieved through collaboration and willingness to reduce the impact on mining pollution on our waters. Those changes helped permanently protect local waters, maximize coal recovery and reduce costs for the operators.

EPA's decision to stop mining waste discharges to high quality streams at the Spruce No. 1 mine was based on several major environmental and water quality concerns. The proposed mine project would have:

- * Disposed of 110 million cubic yards of coal mine waste into

streams.

- * Buried more than six miles of high-quality streams in Logan County, West Virginia with millions of tons of mining waste from the dynamiting of more than 2,200 acres of mountains and forestlands.
- * Buried more than 35,000 feet of high-quality streams under mining waste, which will eliminate all fish, small invertebrates, salamanders, and other wildlife that live in them.
- * Polluted downstream waters as a result of burying these streams, which will lead to unhealthy levels of salinity and toxic levels of selenium that turn fresh water into salty water. The resulting waste that then fills valleys and streams can significantly compromise water quality, often causing permanent damage to ecosystems and streams.
- * Caused downstream watershed degradation that will kill wildlife, impact birdlife, reduce habitat value, and increase susceptibility to toxic algal blooms.
- * Inadequately mitigated for the mine's environmental impacts by not replacing streams being buried, and attempting to use stormwater ditches as compensation for natural stream losses.

Additionally, during the permitting process there was a failure to consider cumulative watershed degradation resulting from past, present, and future mining in the area.

Finally, EPA's decision prohibits five proposed valley fills in two streams, Pigeonroost Branch, and Oldhouse Branch, and their tributaries. Mining activities at the Spruce site are underway in Seng Camp Creek as a result of a prior agreement reached in the active litigation with the Mingo Logan Coal Company. EPA's Final Determination does not affect current mining in Seng Camp Creek.

Background on Clean Water Act Section 404(c)

Clean Water Act Section 404(c) authorizes EPA to restrict or prohibit placing dredged or fill material in streams, lakes, rivers, wetlands and other waters if the agency determines that the activities would result in "unacceptable adverse effects" to the environment, water quality, or water supplies. This authority applies to proposed projects as well as projects previously permitted under the Clean Water Act although EPA is not considering such action for other previously permitted projects.

With today's action, EPA has exercised its Section 404(c) authority only 13 times in its history of the CWA. EPA recognizes the importance of ensuring that its Section 404(c) actions are taken only where environmental impacts are truly unacceptable and will use this authority only where warranted by science and the law.

For a copy of the Final Determination:

http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/404c_index.cfm

Bob Sussman/DC/USEPA/US
01/13/2011 12:00 PM

To Betsaida Alcantara
cc Gregory Peck, Jalil Isa, Kevin Minoli
bcc
Subject Re: response to Wall Street Journal

Works for me.

Robert M. Sussman
Senior Policy Counsel to the Administrator
Office of the Administrator
(202)-564-7397
US Environmental Protection Agency

Betsaida Alcantara i like it. Bob?

01/13/2011 11:49:07 AM

From: Betsaida Alcantara/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA
Cc: Bob Sussman/DC/USEPA/US@EPA, Jalil Isa/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Date: 01/13/2011 11:49 AM
Subject: Re: response to Wall Street Journal

i like it. Bob?

Gregory Peck

(b) (5)

01/13/2011 11:46:13 AM

From: Gregory Peck/DC/USEPA/US
To: Betsaida Alcantara/DC/USEPA/US@EPA
Cc: Bob Sussman/DC/USEPA/US@EPA, Jalil Isa/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Date: 01/13/2011 11:46 AM
Subject: Re: response to Wall Street Journal

(b) (5)

Q: Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

(b) (5)

(b) (5)

Betsaida Alcantara

Q: Want to get his response to the claim by biz...

01/13/2011 11:26:30 AM

From: Betsaida Alcantara/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Cc: Jalil Isa/DC/USEPA/US@EPA
Date: 01/13/2011 11:26 AM
Subject: response to Wall Street Journal

Q: Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

A. (b) (5)

----- Forwarded by Betsaida Alcantara/DC/USEPA/US on 01/13/2011 11:24 AM -----

From: "Power, Stephen" <Stephen.Power@wsj.com>
To: Betsaida Alcantara/DC/USEPA/US@EPA
Date: 01/13/2011 10:56 AM
Subject: RE: spruce release

Thanks. Silva available for interview? Want to get his response to the claim by biz groups that this leaves other CWA permits vulnerable to being revoked after the fact.

-----Original Message-----

From: Alcantara.Betsaida@epamail.epa.gov [mailto:Alcantara.Betsaida@epamail.epa.gov]
Sent: Thursday, January 13, 2011 10:29 AM
To: Power, Stephen
Subject: spruce release

Stephen,
We're going shortly. Here's the press release:

FOR IMMEDIATE RELEASE
January 13, 2011

EPA Halts Disposal of Mining Waste to Appalachian Waters at Proposed Spruce Mine

Agency cites irreversible damage to clean water, environment in the region

WASHINGTON - After extensive scientific study, a major public hearing in West Virginia and review of more than 50,000 public comments, the U.S. Environmental Protection Agency (EPA) today announced that it will use its authority under the Clean Water Act to halt the proposed disposal of mining waste in streams at the Mingo-Logan Coal Company's Spruce No. 1 coal mine. EPA is acting under the law and using the best science to protect water quality, wildlife and Appalachian communities, who rely on clean waters for drinking, fishing and swimming. EPA has used this Clean Water Act authority in just 12 circumstances since 1972 and reserves this authority for only unacceptable cases. This permit was first proposed in the 1990s and has been held up in the courts ever since.

"The proposed Spruce No. 1 Mine would use destructive and unsustainable mining practices that jeopardize the health of Appalachian communities and clean water on which they depend," said EPA Assistant Administrator for Water Peter S. Silva. "Coal and coal mining are part of our nation's energy future and EPA has worked with companies to design mining operations that adequately protect our nation's waters. We have a responsibility under the law to protect water quality and safeguard the people who rely on clean water."

EPA's final determination on the Spruce Mine comes after discussions with the company spanning more than a year failed to produce an agreement that would lead to a significant decrease in impacts to the environment and Appalachian communities. The action prevents the mine from disposing of the waste into streams unless the company identifies an alternative mining design that would avoid irreversible damage to water quality and meets the requirements of the law. Despite EPA's willingness to consider alternatives, Mingo Logan did not offer any new proposed mining configurations in response to EPA's Recommended Determination.

EPA believes that companies can design their operations to make them more sustainable and compliant with the law. Last year, EPA worked closely with a mining company in West Virginia to eliminate nearly 50 percent of their water impacts and reduce contamination while at the same time increasing their coal production. These are the kinds of success stories that can be achieved through collaboration and willingness to reduce the impact on mining pollution on our waters. Those changes helped permanently protect local waters, maximize coal recovery and reduce costs for the operators.

EPA's decision to stop mining waste discharges to high quality streams at the Spruce No. 1 mine was based on several major environmental and water quality concerns. The proposed mine project would have:

- * Disposed of 110 million cubic yards of coal mine waste into streams.
- * Buried more than six miles of high-quality streams in Logan

County,

West Virginia with millions of tons of mining waste from the dynamiting of more than 2,200 acres of mountains and forestlands.

- * Buried more than 35,000 feet of high-quality streams under mining waste, which will eliminate all fish, small invertebrates, salamanders, and other wildlife that live in them.

- * Polluted downstream waters as a result of burying these streams, which will lead to unhealthy levels of salinity and toxic levels of selenium that turn fresh water into salty water. The resulting waste that then fills valleys and streams can significantly compromise water quality, often causing permanent damage to ecosystems and streams.

- * Caused downstream watershed degradation that will kill wildlife, impact birdlife, reduce habitat value, and increase susceptibility to toxic algal blooms.

not

- * Inadequately mitigated for the mine's environmental impacts by replacing streams being buried, and attempting to use stormwater ditches as compensation for natural stream losses.

Additionally, during the permitting process there was a failure to consider cumulative watershed degradation resulting from past, present, and future mining in the area.

Finally, EPA's decision prohibits five proposed valley fills in two streams, Pigeonroost Branch, and Oldhouse Branch, and their tributaries. Mining activities at the Spruce site are underway in Seng Camp Creek as a result of a prior agreement reached in the active litigation with the Mingo Logan Coal Company. EPA's Final Determination does not affect current mining in Seng Camp Creek.

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With today's action, EPA has exercised its Section 404(c) authority only 13 times in its history of the CWA. EPA recognizes the importance of ensuring that its Section 404(c) actions are taken only where environmental impacts are truly unacceptable and will use this authority only where warranted by science and the law.

For a copy of the Final Determination:

http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/404c_index.cfm

Jim
Pendergast/DC/USEPA/US
01/13/2011 12:06 PM

To Ross Geredien, Tanya Code
cc Brian Frazer, Brian Topping, Christopher Hunter, Marcel
Tchaou, David Evans
bcc
Subject Re: Fw: FYI: Talking Points from OD Staff Meeting: 1/7/11

Ross -- Looks good and I'm forwarding to Tanya via this email.

Chris -- If anything new breaks on Spruce due to the Congressional call or other stuff, please make sure Tanya and Benita know as well as Denise. (b) (6)

Jim

Ross Geredien If anyone else wants to comment/edit, please fe... 01/13/2011 11:04:18 AM

From: Ross Geredien/DC/USEPA/US
To: Jim Pendergast/DC/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US@EPA, Marcel Tchaou/DC/USEPA/US@EPA, Brian
Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA
Date: 01/13/2011 11:04 AM
Subject: Re: Fw: FYI: Talking Points from OD Staff Meeting: 1/7/11

If anyone else wants to comment/edit, please feel free.

- The Spruce No. 1 Mine Final Determination was signed by Pete Silva on the morning of 1/13/11 and released later this morning. In addition, a Conference call with members of Congress is scheduled for 4:30 PM on 1/13 to discuss this action.

- Non-responsive

Ross Geredien
ORISE Fellow
EPA Office of Wetlands, Oceans, and Watersheds
202-566-1466
Geredien.ross(AT)epa.gov

Jim Pendergast Here's what went forward last week ----- Forward... 01/13/2011 09:59:42 AM

From: Jim Pendergast/DC/USEPA/US
To: Ross Geredien/DC/USEPA/US@EPA
Date: 01/13/2011 09:59 AM
Subject: Fw: FYI: Talking Points from OD Staff Meeting: 1/7/11

Here's what went forward last week

----- Forwarded by Jim Pendergast/DC/USEPA/US on 01/13/2011 09:59 AM -----

From: Tanya Code/DC/USEPA/US
To: OWOW Managers Group

Date: 01/13/2011 09:58 AM
Subject: FYI: Talking Points from OD Staff Meeting: 1/7/11

FYI

Tanya Code
Special Assistant
Office of Wetlands, Oceans and Watersheds
U.S. Environmental Protection Agency
Tel: 202.566.1063
Fax: 202.566.1147

----- Forwarded by Tanya Code/DC/USEPA/US on 01/13/2011 09:58 AM -----

From: Tanya Code/DC/USEPA/US
To: Denise Keehner/DC/USEPA/US@EPA
Cc: Benita Best-Wong/DC/USEPA/US@EPA
Date: 01/06/2011 05:53 PM
Subject: Talking Points for OD Staff Meeting: 1/7/11

Talking Points for OD Staff Meeting January 7, 2011

MTM

- Spruce: (b) (5)
- Non-responsive

Non-responsive

- [REDACTED]
- [REDACTED]

[illegible]

[REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]

Brian Topping/DC/USEPA/US

01/13/2011 01:48 PM

To Marcel Tchaou, Ross Geredien

cc Christopher Hunter

bcc

Subject Fw: Draft Spring Branch Documents

We should review before the training next week so we can ask questions and discuss with R3 while in Philly.

Brian Topping

US Environmental Protection Agency

Wetlands Division, Room 7231

Office: 202-566-5680, FAX: 202-566-1375

Mail Code 4502T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460

Deliveries: EPA West -- Room 7231-S, 1301 Constitution Avenue, NW, Washington, DC 20004

topping.brian@epa.gov

----- Forwarded by Brian Topping/DC/USEPA/US on 01/13/2011 01:45 PM -----

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 04:08 PM
Subject: Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc



SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc

ATTACHMENTS REDACTED - DELIBERATIVE

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Jaclyn
McIlwain/R3/USEPA/US
01/13/2011 06:16 PM

To Evelyn MacKnight
cc Brian Trulear
bcc
Subject Re: revised spreadsheet

I have added dates, filled in the notes I got from Mark, and sorted by type of objection. However, I can't seem to sort by subcategory of objection (i.e. - TMDL implementation, Nutrients, etc.). Anyone have any advice?



ATTACHMENT REDACTED - DELIBERATIVE

Region 3 objections to state NPDES permits updated.docx

Jaclyn McIlwain
NPDES Permits Branch (3WP41)
Water Protection Division
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103

Ph: 215.814.2713
Fax: 215.814.2302
mcilwain.jaclyn@epa.gov

Evelyn MacKnight

Evelyn S. MacKnight Chief, NPDES Permits Bra...

01/13/2011 03:41:52 PM

From: Evelyn MacKnight/R3/USEPA/US
To: Jaclyn McIlwain/R3/USEPA/US@EPA, Brian Trulear/R3/USEPA/US@EPA
Date: 01/13/2011 03:41 PM
Subject: revised spreadsheet



ATTACHMENT REDACTED - DELIBERATIVE

rptobjection_universe 1-13.xlsx

Evelyn S. MacKnight
Chief, NPDES Permits Branch (3WP41)
Water Protection Division
Phone: 215-814-5717
Fax: 215-814-2301
email: macknight.evelyn@epa.gov

Daniel
Holliman/R4/USEPA/US
01/14/2011 02:45 PM

To: Ross Geredien
cc
bcc
Subject: Licking River CIA - Landuse Analysis

Ross,

Attached is the CIA for Licking River that I spoke to you about.

The Land use / cover analysis for the HUC-8 is located on Pages 51-65...Mostly tables and graphs.

I also included my comments below.

Thanks,

Dan

Dan Holliman
Life Scientist
EPA Region 4, NEPA Program Office
Sam Nunn AFC, 61 Forsyth St.,
Atlanta, Ga 30303-8960

Phone: 1-404-562-9531
Email: Holliman.Daniel@epa.gov



Document Withheld-FOIA (b) (5)

LRW-CIA-MFDC 19 Nov 2010.pdf

My comments for this section :

- (b) (5) [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

Jaclyn
Mcllwain/R3/USEPA/US
01/18/2011 01:15 PM

To Bette Conway, Francisco Cruz
cc
bcc
Subject Meeting with 404 if you're interested

I'm sure this group would appreciate some 402 input if you're interested. Just wanted to let you know!

Jaclyn Mcllwain
NPDES Permits Branch (3WP41)
Water Protection Division
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103

Ph: 215.814.2713
Fax: 215.814.2302
mcllwain.jaclyn@epa.gov

----- Forwarded by Jaclyn Mcllwain/R3/USEPA/US on 01/18/2011 01:14 PM -----

Rescheduled: draft 404 Q&A discussion

Tue 01/18/2011 2:30 PM - 4:00 PM

Attendance is **required** for Jaclyn Mcllwain

Chair: **Joy Gillespie/R3/USEPA/US**

Location: 12th floor, Rm 223

This reschedule notice has been applied to the meeting.

Hello all,

Due to the holiday, the EAID managers meeting has been moved to Tuesday creating a scheduling conflict with our Q&A meeting.

Hopefully you all can still participate.

Thanks!

Joy

Required:

Alaina DeGeorgio/R3/USEPA/US@EPA, Carrie Traver/R3/USEPA/US@EPA, Gregory Gies/R3/USEPA/US@EPA, Jaclyn Mcllwain/R3/USEPA/US@EPA, Jennifer Fulton/R3/USEPA/US@EPA, Jessica Martinsen/R3/USEPA/US@EPA, Mark Douglas/R3/USEPA/US@EPA, Michael Mansolino/R3/USEPA/US@EPA, Stephanie Chin/R3/USEPA/US@EPA

Optional:

Jeffrey Lapp/R3/USEPA/US@EPA, John Forren/R3/USEPA/US@EPA

Description



ATTACHMENT REDACTED - DELIBERATIVE

404 QsandAs 080410.doc

Hi All,

Thank you so much for taking the time out of your busy schedules to review the 404 Q&As.
Looking forward to hearing your comments.

Joy

**Jim
Pendergast/DC/USEPA/US**

01/18/2011 01:16 PM

To Christopher Hunter

cc

bcc

Subject Re: OWOW Accomplishments write-up on coal mining

Thanks. All I did in editing was to add URLs and your name as contact.



Document Withheld-FOIA (b)(5)

Surface Coal Mining.docx

Christopher Hunter

[Chris Hunter U.S. Environmental Protection Ag...](#)

01/18/2011 09:41:38 AM

From: Christopher Hunter/DC/USEPA/US
To: Jim Pendergast/DC/USEPA/US@EPA
Date: 01/18/2011 09:41 AM
Subject: OWOW Accomplishments write-up on coal mining

[attachment "2010 MTM OWOW Report.docx" deleted by Jim Pendergast/DC/USEPA/US]

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

Joy Gillespie/R3/USEPA/US

01/18/2011 01:56 PM

To David Rider

cc

bcc

Subject Fw: draft 404 Qs and As

Joy Gillespie

EPA Region III
Environmental Assessment & Innovation Division
Office of Monitoring and Assessment (3EA50)

215-814-2793
gillespie.joy@epa.gov

Learn more about the Office of Monitoring & Assessment at:
<http://epa.gov/reg3esd1/3ea50.htm>

----- Forwarded by Joy Gillespie/R3/USEPA/US on 01/18/2011 01:56 PM -----

From: Margaret Passmore/R3/USEPA/US
To: Regina Poeske/R3/USEPA/US@EPA
Cc: Joy Gillespie/R3/USEPA/US@EPA, David Rider/R3/USEPA/US@EPA
Date: 11/01/2010 10:49 AM
Subject: draft 404 Qs and As

These are the draft 404 Qs and As that Joy will use as a starting point for discussion with Jeff's staff people. The idea is to capture all the freshwater bioassessment questions that we commonly get and Joy gets, with answers that hopefully will be useful and make sense to everyone.

Hoping this will be a good place to capture all those questions and answers and it will become a good resource for everybody. I am sure it will also generate more questions and further discussion.

M



ATTACHMENT REDACTED - DELIBERATIVE

404 QsandAs 080410.doc

Margaret Passmore
Freshwater Biology Team
Office of Monitoring and Assessment (3EA50)
Environmental Assessment and Innovation Division
USEPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0245
(f) 304-234-0260
passmore.margaret@epa.gov

Visit our website at <http://epa.gov/reg3esd1/3ea50.htm>

David Evans/DC/USEPA/US

01/18/2011 05:53 PM

To "Christopher Hunter"

cc "Brian Frazer"

bcc

Subject Fw: Updated Spring Branch docs w/ monitoring language

Chris - Any substantive comments on Region 3's proposed letter?

Dave

David Evans, Director

Wetlands Division

Office of Wetlands, Oceans and Watersheds

(202) 566-0535

(202) 725-6415 (cell)

-----Sent from my BlackBerry Wireless Handheld

Jeffrey Lapp

----- Original Message -----

From: Jeffrey Lapp

Sent: 01/18/2011 02:39 PM EST

To: Bob Sussman; Ann Campbell

Cc: John Pomponio; William Early; David Evans

Subject: Fw: Updated Spring Branch docs w/ monitoring language

Bob -

As promised on today's call, here are the draft letter and briefing document, for the Spring Branch ECP mine. Currently these are being reviewed by Bill and Shawn and have been sent to OWOW for review and comment.

Please let me know if you have any questions or concerns.

Thanks,

Jeff

Jessica Martinsen

----- Original Message -----

From: Jessica Martinsen

Sent: 01/12/2011 12:15 PM EST

To: Jeffrey Lapp

Cc: Allison Graham

Subject: Updated Spring Branch docs w/ monitoring language

Quick additions in the last paragraph of the close-out letter and the proposed resolution section in the briefing doc. It's something to work with.



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc



SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc

ATTACHMENT REDACTED - DELIBERATIVE

Jessica Martinsen

U.S. EPA Region III

Office of Environmental Programs

1650 Arch St. (3EA30)

Philadelphia, PA 19103

215-814-5144 (office)

215-814-2783 (fax)

**Matthew
Klasen/DC/USEPA/US**

01/18/2011 06:23 PM

To Matthew Klasen

cc

bcc

Subject Stuff

mk



32_Order_Deny Pl_Deny MTD_01-14-2011.pdf



surface_bill_2ndcirc.test.docx.doc



EIS - Chapter 4 - First Working Draft 1-12-11.pdf



EIS Comment form - Chapter 4 - mk.docx



surface_bill_2ndcirc.analysis.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

ALL ATTACHMENTS EXCEPT ORDER REDACTED -
DELIBERATIVE

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

NATIONAL MINING ASSOCIATION,

Plaintiff,

v.

LISA JACKSON Administrator,
U.S. ENVIRONMENTAL PROTECTION
AGENCY, et al.,

Defendants,

SIERRA CLUB et al.,

Defendant-Intervenors.

Civil Action No. 10-1220 (RBW)

MEMORANDUM OPINION

The plaintiff brings this action against the federal defendants pursuant to the Clean Water Act, 33 U.S.C. § 1251 (2006), the Surface Mining Control and Reclamation Act, 30 U.S.C. § 1201 (2006), and the Administrative Procedure Act ("APA"), 5 U.S.C. § 702 (2006), challenging a series of memoranda and a detailed guidance released by the Environmental Protection Agency ("EPA"). The parties appeared before the Court on December 15, 2010, for argument on the federal defendants' motion to dismiss, Defendants' Motion to Dismiss ("Defs.' Mot. to Dismiss"), and the plaintiff's motion for a preliminary injunction, Plaintiff's Motion for a Preliminary Injunction ("Pl.'s PI Mot."). For the reasons that follow, the Court denies both the motion to dismiss and the motion for a preliminary injunction.¹

¹ In deciding these two motions, the Court also considered: the Complaint for Declaratory and Injunctive Relief ("Compl."); the Defendants' Memorandum in Support of their Motion to Dismiss ("Defs.' Mem. re: Dismiss"); the Plaintiff National Mining Association's Memorandum in Opposition to Defendants' Motion to Dismiss ("Pl.'s Opp'n re: Dismiss"); the United States' Reply Memorandum in Support of its Motion to Dismiss

(Continued . . .)

I. Statutory Background

This section summarizes the relevant Clean Water Act permit granting scheme.

Clean Water Act Section 404 Permits

Section 404 permits are issued by the United States Army Corps of Engineers ("Corps") "for the discharge of dredged and fill material into navigable waters at specified disposal sites." 33 U.S.C. § 1344(a). The Corps has sole authority to issue Section 404 permits, but in doing so it must apply guidelines that it develops in conjunction with the EPA.² Id. § 1344(b). In addition to providing the EPA with the responsibility to develop the guidelines in conjunction with the Corps, the Clean Water Act grants the EPA authority to prevent the Corps from authorizing certain disposal sites.³ Id. § 1344(c). In the absence of a specific regulatory exception, the Corps must reach a decision on a pending application for a Section 404 permit no later than 60 days after receipt of the application for the permit. See 33 C.F.R. § 325.2(d)(3) (2010) (providing that "[d]istrict engineers will decide on all applications not later than 60 days after receipt of a complete application, unless" one of six exceptions applies).

(. . . continued)

("Defs.' Reply re: Dismiss"); the Plaintiff's Memorandum in Support of a Motion for Preliminary Injunction ("Pl.'s PI Mem."); the United States' Memorandum in Opposition to National Mining Association's Motion for a Preliminary Injunction ("Defs.' PI Opp'n"); the Plaintiff National Mining Association's Reply Memorandum in Support of Motion for Preliminary Injunction ("Pl.'s PI Reply"); the United States' Surreply Brief in Opposition to the National Mining Association's Motion for a Preliminary Injunction ("Defs.' PI Surreply"); and the Memorandum of Sierra Club et al. in Opposition to the Plaintiff's Motion for a Preliminary Injunction ("Def. Ints.' PI Opp'n").

² The EPA-promulgated 404(b)(1) guidelines, codified at 40 C.F.R. Part 230, guide the Corps' review of the environmental effects of proposed disposal sites. The guidelines provide that "[n]o modifications to the basic application, meaning, or intent of these guidelines will be made without rulemaking by the Administrator under the Administrative Procedure Act." 40 C.F.R. § 230.2(c) (emphasis added).

³ To exercise its authority to prevent the Corps from authorizing a particular dumpsite, known as the 404(c) veto authority, the EPA must determine, after notice and an opportunity for public hearing, that certain unacceptable environmental effects would occur if the disposal site were approved by the Corps and granted a permit.

Clean Water Act Section 402 Permits

Known as National Pollutant Discharge Elimination System ("NPDES") permits, Section 402 permits are typically issued by states for the discharge of non-dredged and non-fill material. 33 U.S.C. § 1342(a)(5). These permits govern pollutants that are assimilated into receiving waters by establishing limits placed on the make-up of wastewater discharge. Once the EPA approves a state permitting program, states have exclusive authority to issue NPDES permits, although the EPA does have limited authority to review the issuance of such permits by states. 33 U.S.C. § 1342(d). All of the Appalachian States allegedly impacted by the EPA actions at issue in this litigation (Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) have EPA-approved Section 402 permit authority.

Clean Water Act Section 303 Water Quality Standards

Section 303 of the Clean Water Act allocates primary authority for the development of water quality standards to the states. 33 U.S.C. § 1313. A water quality standard designates uses for a particular body of water and establishes criteria for protecting and maintaining those uses. 40 C.F.R. § 131.2 (2010). These standards can be expressed as a specific numeric limitation on pollutants or as a general narrative statement. See 40 C.F.R. § 131.3(b). While states have the responsibility to develop the water quality standards, the EPA reviews the standards for approval. 40 C.F.R §§ 131.4, 131.5. The EPA may promulgate water quality standards to the exclusion of a state only if (1) it determines that a state's proposed new or revised standard does not measure up to the Clean Water Act's requirements and the state refuses to accept EPA-proposed revisions, or (2) a state does not act, but in the EPA's view a new or revised standard is necessary. 33 U.S.C. § 1313(a)(2).

II. Factual Background⁴

Plaintiff National Mining Association ("NMA") alleges that recent actions taken by the EPA and the Corps have unlawfully obstructed the Clean Water Act permitting processes for coal mining. Complaint ("Compl.") ¶ 2. The plaintiff identifies two series of documents that it asserts unlawfully changed the established permitting process: (1) the June 11, 2009 Enhanced Coordination Process ("EC Process") Memoranda, and (2) the April 1, 2010 Detailed Guidance Memorandum ("Guidance Memorandum"). Id. The plaintiff represents that its member companies are "not seeking to shirk their responsibilities under any environmental protection laws or regulations; rather, they are merely asking [the] EPA and the Corps to regulate" within the bounds of the law. Pl.'s PI Mem. at 41-42.

The plaintiff asserts that the EC Process memoranda formalized an "extraregulatory" practice that commenced in January 2009. Id. at 7. At that time, the EPA issued a series of letters to the Corps raising questions about the legality of Section 404 permits that, the plaintiff claims, the Corps was poised to issue imminently. Id. According to the plaintiff, the EC Process memoranda then "imposed substantive changes to the Section 404 permitting process by creating a new level of review by [the] EPA and an alternate permitting pathway not contemplated by the current regulatory structure." Id. The plaintiff represents that the EC Process utilizes the Multi-Criteria Integrated Resource Assessment ("MCIR Assessment") to screen pending Section 404 permits and determine which of those pending permits will proceed for standard review by the Corps and which will be subject to the EC process. Id. at 8. The plaintiff contends that once a permit is designated for the EC Process, it faces a burdensome review process wholly different

⁴ The following facts are drawn from the allegations contained in the plaintiff's complaint and in the plaintiff's memorandum supporting its motion for a preliminary injunction.

than that contemplated by the Clean Water Act.⁵ Id. Ultimately, the EPA announced, in September 2009, that through the MCIR Assessment it had identified 79 coal-related pending Section 404 permits that would be subjected to the EC process. Id. at 9.

Then, in April 2010, the EPA released its Guidance Memorandum in which, the plaintiff asserts, the EPA "made sweeping pronouncements regarding the need for water quality-based limits" in Section 402 and 404 permits. Id. The plaintiff maintains that the Guidance (1) effectively established a region-wide water quality standard based on conductivity levels it associated with adverse impacts to water quality, (2) was being used by the EPA to cause indefinite delays in the permitting process, and (3) caused various permitting authorities to insert the conductivity level into pending permits. Id. at 9-10. Further, the EPA used the Guidance to reopen previously issued permits to impose the conductivity limit, which, the plaintiff alleges "halt[s mining] projects in their tracks." Id. at 10-11. In contrast to the MCIR Assessment and the EC process, which apply only to pending Section 404 permits, the Guidance covers both Section 402 and 404 permits associated with surface mining projects in Appalachia. Defs.' Mem. re: Dismiss at 17 n.7.

III. The Defendants' Motion to Dismiss

A. Standard of Review

Rule 12(b)(1) of the Federal Rules of Civil Procedure provides for the dismissal of claims for which the complaint does not set forth allegations sufficient to establish the court's jurisdiction over the subject matter of the claims presented. Fed. R. Civ. P. 12(b)(1). In deciding a motion to dismiss challenging the Court's subject matter jurisdiction under Rule 12(b)(1), a

⁵ The plaintiff alleges that the EC process adds a minimum of 60 days, and perhaps many months, to the Section 404 review process.

court "must accept as true all of the factual allegations contained in the complaint" and draw all reasonable inferences in favor of the plaintiff, Brown v. District of Columbia, 514 F.3d 1279, 1283 (D.C. Cir. 2008), but courts are "not required . . . to accept inferences unsupported by the facts or legal conclusions that are cast as factual allegations." Rann v. Chao, 154 F. Supp. 2d 61, 64 (D.D.C. 2001). Further, the "court may consider such materials outside the pleadings as it deems appropriate to resolve the question whether it has jurisdiction in the case." Scolaro v. D.C. Bd. of Elections & Ethics, 104 F. Supp. 2d 18, 22 (D.D.C. 2000). Ultimately, however, the plaintiff bears the burden of establishing the Court's jurisdiction, Rasul v. Bush, 215 F. Supp. 2d 55, 61 (D.D.C. 2002), and where subject matter jurisdiction does not exist, "the court cannot proceed at all in any cause." Steel Co. v. Citizens for a Better Env't, 523 U.S. 83, 94 (1998).

B. Legal Analysis

The federal defendants assert three separate but related jurisdictional grounds for dismissal: (1) the lack of final agency action; (2) the plaintiff's claims are not ripe for review; and (3) the plaintiff's lack of standing. The Court will address each argument in turn.

1. Final Agency Action

The APA limits judicial review to "final agency action for which there is no other adequate remedy in court." 5 U.S.C. § 704. In other words, finality is a "threshold question" that determines whether judicial review is available. Fund for Animals, Inc. v. U.S. Bureau of Land Mgmt., 460 F.3d 13, 18 (D.C. Cir. 2006). The Supreme Court has explained that, "[a]s a general matter, two conditions must be satisfied for agency action to be final: First, the action must mark the consummation of the agency's decision[-]making process," Bennett v. Spear, 520 U.S. 154, 177-78 (1997) (quotation marks omitted), and second, "the action must be one by which rights or

obligations have been determined, or from which legal consequences will flow."⁶ Id. at 178 (quotation marks omitted).

Here, the federal defendants assert that none of the EPA's actions—the MCIR Assessment, the EC Process, or the Guidance Memorandum—qualify as final agency action within the meaning of the APA, and that the plaintiff's claims must therefore be dismissed. Defs.' Mem. re: Dismiss at 13. They maintain that the EPA used the MCIR Assessment to screen permit applications as only the first of several steps in the permitting process, and that the MCIR Assessment therefore did not mark the consummation of the decision-making process or give rise to legal consequences. Id. at 14. The federal defendants similarly argue that neither the EC Process nor the Guidance Memorandum mark the consummation of the decision-making process or give rise to any legal obligations. Id. at 15, 17. Throughout their filings with the Court, the federal defendants emphasize what seems to be their core finality argument: that the EPA's actions are not final because they do not mark the grant or denial of the various permits at issue. See id. at 15 (quoting Chem. Mfrs. Ass'n v. EPA, 26 F. Supp. 2d 180, 183 n.2 (D.D.C.

⁶ In deciding the question of finality, the Court must also assess the question of whether the EPA's actions constitute a de facto legislative rule, promulgated in violation of the APA's notice and comment requirements. This is so given the similarity between the second aspect of the finality assessment—whether the action gives rise to legal obligations or is one from which legal consequences flow—and the standard for determining whether a challenged action constitutes a regulation or a mere statement of policy—"whether the action has binding effects on private parties or on the agency," Molycorp, Inc. v. EPA, 197 F.3d 543, 545 (D.C. Cir. 1999), or, in other words, "whether the agency action binds private parties or the agency itself with the force of law," Gen. Elec. Co. v. EPA, 290 F.3d 377, 382 (D.C. Cir. 2002). Indeed, the District of Columbia Circuit has recognized the manner in which these standards become intertwined:

In order to sustain their position, appellants must show that the [challenged guidelines] either (1) reflect "final agency action," . . . or, (2) constitute a de facto rule or binding norm that could not properly be promulgated absent the notice-and-comment rulemaking required by [the APA]. These two inquiries are alternative ways of viewing the question before the court. Although, if appellants could demonstrate the latter proposition, they would implicitly prove the former, because the agency's adoption of a binding norm obviously would reflect final agency action.

Ctr. for Auto Safety v. Nat'l Highway Traffic Safety Admin., 452 F.3d 798, 806 (D.C. Cir. 2006). Agency action, however, can meet the first prong of the Bennett test without meeting the second. See, e.g., id. at 431 ("The guidelines are nothing more than general policy statements with no legal force. . . . Therefore, the guidelines cannot be taken as 'final agency action,' nor can they otherwise be seen to constitute a binding legal norm.").

1998), where the Court stated: "the relevant question is not whether the action concludes a decision[-]making process . . . but whether the action concludes the decision[-]making process"), 17 ("As with the [MCIR] Assessment and the EC Process, the Guidance does not mark the consummation of the relevant decision[-] making process here, i.e., the review of permit applications pursuant to the [Clean Water Act]. That process consummates in final agency action only when a permit is issued, denied, or vetoed.").

The plaintiff counters that the federal "defendants' interpretation of finality is too restrictive, as it encompasses only the last possible agency decision." Pl.'s Opp'n re: Dismiss at 24-25. It asserts that the issuance of the MCIR Assessment reflects the EPA's settled, final position concerning how it would screen all pending Section 404 permit applications; that the creation of the EC process reflects the settled, final position to establish an alternate permitting framework, thus changing the legal landscape set forth in the 404(b)(1) guidelines; and that the Guidance Memorandum marks the consummation of the decision-making process and has had practical effects that have changed the legal obligations of the permitting authorities, i.e., the Corps and the state regulators, and the plaintiff's members who are seeking permits. Id. at 26-27.

The plaintiff points to both Appalachian Power Co. v. EPA, 208 F.3d 1015 (D.C. Cir. 2000), and CropLife America v. EPA, 329 F.3d 876 (D.C. Cir. 2003), as supporting its assertions that the EPA's actions here constitute final agency action. In Appalachian Power, power companies alleged that an EPA guidance document imposed unauthorized requirements on states in connection with the operation of permit programs under the Clean Air Act. 208 F.3d at 1015. There, as here, the EPA argued that the guidance was not subject to judicial review because it was neither final agency action nor a binding legislative rule. Id. at 1020. The District of Columbia Circuit, however, disagreed, concluding that

The short of the matter is that the guidance, insofar as relevant here, is final agency action, reflecting settled agency position which has legal consequences both for State agencies administering their permit programs and for companies like those represented by petitioners who must obtain [Clean Air Act] permits in order to continue operating.⁷

Id. at 1023. There was evidence in Appalachian Power that "State authorities, with EPA's guidance in hand, [were] insisting on continuous opacity monitors," id., i.e., compliance with the standards set forth in the guidance. Next, in CropLife, the District of Columbia Circuit determined that an EPA directive, which had been published in a press release and changed the established practice of relying on third-party studies, was a binding regulation. 329 F.3d at 876. The court held that "the directive clearly establishe[d] a substantive rule declaring that third-party human studies are now deemed immaterial in EPA regulatory decision[-]making," id. at 883, and further concluded that the "disputed directive concretely injures petitioners, because it unambiguously precludes the agency's consideration of all third-party human studies, i.e., studies that petitioners previously have been permitted to use to verify the safety of their products." Id. at 884.

The federal defendants argue that the EC Process memoranda here can be distinguished from the actions in Appalachian Power and CropLife because the EC process memoranda are not binding on their face and the EPA explicitly stated they were not binding. Defs.' Reply re: Dismiss at 3-4. The federal defendants further attempt to distinguish the Guidance by pointing out that it was issued as an interim document and clearly stated, on its face, that it would be issued in final form in 2011. Id. at 9-10. The federal defendants assert that the Court should

⁷ The court acknowledged that the concluding paragraph of the guidance contained a disclaimer of sorts, indicating that the policies set forth in the document were intended solely as guidance, did not represent final agency action, and could not be relied upon to create enforceable rights, but then pointed out that "this language is boilerplate; since 1991 EPA has been placing it at the end of all of its guidance documents." Appalachian Power, 208 F.3d at 1023.

follow Gem County Mosquito Abatement District v. EPA, 398 F. Supp. 2d 1 (D.D.C. 2005), in which the court held that an interim EPA guidance advising a county mosquito abatement entity that it did not need an NPDES permit to apply pesticides to waters was not final agency action. In Gem County, although believing it did not need one, the plaintiff nonetheless sought an NPDES permit because it had been threatened with being sued and was then sued by organic farmers who asserted that the pesticides used to abate the mosquitoes threatened their certification as organic farms. Id. at 4. The EPA advised the abatement entity that its position that it did not need an NPDES permit was correct, which ultimately lead to dismissal of the case due to the absence of a case or controversy, as both parties agreed that a permit was unnecessary. Id. at 8. In its rejection of the plaintiff's argument that the interim guidance was a final rule, the court found that the EPA had "made clear that the Interim Guidance was just that: interim guidance on which public comment would be solicited and considered before issuing a final interpretation and guidance. In its interim form, [the] guidance is interlocutory and does not finally determine legal rights or obligations." Id. at 11. The court did explain, however, that "the 'finality' element is interpreted in a 'pragmatic way.'" Id. (quoting FTC v. Standard Oil Co. of Cal., 449 U.S. 232, 239 (1980)). Drawing from its analysis of the case and controversy prerequisite to its authority to exercise jurisdiction in the matter, the court concluded: "To regard EPA's interim guidance as final where it does not impose a legal obligation to obtain permits would improperly and prematurely interfere with the process by which an agency reaches a final position on matters committed to its discretion." Gem Cnty, 398 F. Supp. 2d at 11. Therefore, the Court's finality assessment seems to have had more to do with what had actually occurred in response to the guidance—the preservation of the status quo—and not the mere fact that the EPA had stated that the document it issued was interim and interlocutory.

Here, because the agency actions more closely resemble those at issue in Appalachian Power and CropLife than was the situation before the Court in Gem County, the MCIR Assessment, the EC Process, and the Guidance Memorandum all meet the criteria of final agency actions. The federal defendants' view of what amounts to finality is too narrow, as it is possible for an agency to take final agency actions during a permit assessment process prior to actually determining whether to grant or deny an application for a permit. Although the federal defendants stress in their filings, and vigorously reiterated at the December 15, 2010 hearing, that the MCIR Assessment, the EC Process, and the Guidance Memorandum impose no new substantive requirements on permit applications, see, e.g., Defs' Mem. re: Dismiss at 18 (asserting that the "Guidance does not . . . establish any new standards that supplement or amend the existing statutory and regulatory requirements"), it is clear to the Court that the EPA has implemented a change in the permitting process.

It appears obvious on the current record that the MCIR Assessment reflects the EPA's final decision to evaluate pending permits to determine whether they would undergo the EC Process. As shown in Appalachian Power, a reworking of the permitting process gives rise to legal consequences for companies that must obtain those permits to operate. 208 F.3d at 1023. From the moment a permit is screened pursuant to the MCIR Assessment, the EPA seems to be imposing an additional step to the permitting process that is not contemplated or set forth in the 404(b)(1) guidelines. This is also true for the EC Process itself. Again, like the documents at issue in Appalachian Power, the EC Process Memoranda impose unequivocal requirements on the exercise of regulatory authority regarding the pending permit applications.⁸ Accordingly, as

⁸ For example, the June 11, 2009 EC Process Memorandum begins by explaining that the "EPA and the Corps hereby establish a process for enhanced coordination." Pl.'s PI Mot., Ex. 1 (June 11, 2009 Memorandum to the Field on Enhanced Coordination Procedures) (emphasis added).

in CropLife, the EC Process "reflects an obvious change," 329 F.3d at 881, in the permitting regime set forth in Section 404 of the Clean Water Act and in the regulations implementing that provision. Thus, despite the fact that the 404(b)(1) guidelines provide that "[n]o modifications to the basic application . . . of these [g]uidelines will be made without rulemaking . . . under the [APA]", 40 C.F.R. § 230.2(c), it seems quite apparent that the MCIR Assessment and the EC Process enacted a change in the basic application of the permitting procedures for Section 404 permits. Accordingly, these changes to the statutorily established process give rise to the legal consequences necessary to satisfy the second prong of the Bennett finality analysis.

While the Guidance Memorandum is perhaps a closer call than the MCIR Assessment and the EC Process, it too, qualifies as final agency action because, despite the representation that it is an interim document, it is nonetheless being applied in a binding manner and has been implemented in its current version even though the EPA continues to receive comments about it. Therefore, based on the record before the Court at this time, it appears that the EPA is treating the Guidance as binding. See Pl.'s PI Mem. at 21 (quoting an EPA official as saying that the "guidance stands" and "will continue to [be used to ensure] that mining permits issued in West Virginia and other Appalachian states provide the protection required under federal law"). The EPA official's statement can only be interpreted as reflecting the EPA's settled, final stance on its current application of the Guidance Memorandum, even if this position may change at some point in the future once the EPA promulgates a new version of the Guidance Memorandum. See Appalachian Power, 208 F.3d at 1022 (noting that the "EPA may think that because the Guidance . . . is subject to change, it is not binding and therefore not final action," but concluding that "all laws are subject to change The fact that a law may be altered in the future has nothing to do with whether it is subject to judicial review at the moment.")).

Thus, unlike the guidance in Gem County, which merely had the effect of preserving the status quo, the Guidance Memorandum here has a practical impact on the plaintiff's members seeking permits. In other words, despite the EPA's assertions that the Guidance Memorandum is only an interim document, the Guidance Memorandum is being treated and applied in practice as if it were final. The practical impact imposed upon permit applicants by the recent actions of the EPA are sufficient to satisfy the Bennett finality test because the "'finality' element is interpreted in a 'pragmatic way.'" Gem Cnty, 398 F. Supp. 2d at 11 (quoting FTC v. Standard Oil Co. of Cal., 449 U.S. 232, 239 (1980)); accord Nat'l Ass'n of Home Builders v. Norton, 415 F.3d 8, 15 (D.C. Cir. 2005) ("Finality resulting from the practical effect of an ostensibly non-binding agency proclamation is a concept [this Circuit has] recognized in the past.") (citing Gen. Elec. Co. v. EPA, 290 F.3d 377, 383 (D.C. Cir. 2002)).

2. Ripeness

"[R]epresent[ing] a prudential attempt to balance the interests of the court and the agency in delaying review against the petitioner's interest in prompt consideration of allegedly unlawful agency action," Florida Power & Light Co. v. EPA, 145 F.3d 1414, 1420-21 (D.C. Cir. 1998), the ripeness doctrine requires courts to consider the framework set forth by the Supreme Court in Abbott Laboratories v. Gardner, 387 U.S. 136, 148-49 (1967). First, a court must "evaluate the 'fitness of the issues for judicial decision.'" Fla. Power & Light, 145 F.3d at 1421 (quoting Abbott Labs., 387 U.S. at 149). If a challenged decision is not "fit" for review, "the petitioner must show 'hardship' in order to overcome a claim of lack of ripeness." Fla. Power & Light, 145 F.3d at 1421. In assessing the fitness prong, courts evaluate "whether the agency action is final; whether the issue presented for decision is one of law which requires no additional factual

development; and whether further administrative action is needed to clarify the agency's position." Action Alliance of Senior Citizens v. Heckler, 789 F.2d 931, 940 (D.C. Cir. 1986).

The federal defendants assert that the plaintiff's claims should be dismissed because they are not ripe for review. Defs.' Mem. re: Dismiss at 19. Specifically, the federal defendants again argue that the MCIR Assessment, the EC Process, and Guidance Memorandum are not final agency actions, and further, that their review "outside the context of a specific permitting decision would entangle the court in abstract considerations." Id. at 21. The plaintiff in turn again contends that the three actions at issue here constitute final agency actions and present primarily, if not purely, legal questions for which further factual development in the context of a specific permitting decision is unnecessary. Pl.'s Opp'n re: Dismiss at 30, 34.

As explained above, based on the record currently before the Court, the MCIR Assessment, the EC Process, and the Guidance all appear to constitute final agency actions. Moreover, the claims raised by the plaintiff, i.e., whether the actions constitute legislative rules and whether the EPA violated the notice and comment requirement of the APA, present purely legal questions. See Cement Kiln Recycling Coal. v. EPA, 493 F.3d 207, 215 (D.C. Cir. 2007) (explaining that it is "well-established that claims that an agency's action is . . . contrary to law present purely legal issues . . . [s]o, too, do claims that an agency violated the APA by failing to provide notice and opportunity for comment."). The federal defendants' insistence on "specific permitting decisions," Defs.' Mem. re: Dismiss at 21, echoes their argument that their actions could not be final as they had not granted or denied any permits it has subjected to the EC process. This, however, misses the point of the plaintiff's claim: that the process itself is unlawful, and not simply any decisions that may result from the application of that process. See Pl.'s Opp'n re: Dismiss at 31 ("NMA's contention is that Defendants acted contrary to law in

issuing the EC Process Memoranda, which unambiguously dictated that the memoranda—and not existing regulations—would govern [pending] permit applications."). Thus, no factual developments would clarify these issues or assist the Court in evaluating the plaintiff's claims. See Appalachian Power, 208 F.3d at 1023 n.18 ("Whether EPA properly instructed state authorities to conduct sufficiency reviews of existing state and federal standards and to make those standards more stringent if not enough monitoring was provided will not turn on the specifics of any particular permit."). Accordingly, the Court finds the plaintiff's claims ripe for review on the defendants' dismissal motion.⁹

3. Standing

The irreducible constitutional minimum of standing contains three elements: (1) injury in fact, (2) causation, and (3) the possibility of redress by a favorable decision. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992). These requirements apply whether an organization asserts standing on its own behalf, or on behalf of its members. Havens Realty Corp. v. Coleman, 455 U.S. 363, 378 (1982). "[A]t the pleading stage, general factual allegations of injury resulting from the defendant's conduct may suffice, for on a motion to dismiss we presume that general allegations embrace those specific facts that are necessary to support the claim." Bennett, 520 U.S. at 168 (internal quotations omitted).

The federal defendants assert that the plaintiff has failed to establish the requisite injury-in-fact prong of the test for standing because it has not shown that its members have suffered a particularized and concrete injury traceable to the MCIR Assessment, the EC Process, or the Guidance Memorandum. Defs.' Mem. re: Dismiss at 30. They again rely on the fact that "none

⁹ Because the Court, pursuant to the first element of the ripeness doctrine set forth by the Supreme Court in Abbott Laboratories, 387 U.S. 136 (1967), and clarified by this Circuit in Florida Power & Light, 145 F.3d 1414 (D.C. Cir. 1998), concludes that the issues presented in this litigation are "fit" for review, it need not address the second, hardship factor of the ripeness test. See Fla. Power & Light, 145 F.3d at 1421.

of the permit applications subject to the process has been denied by the Corps or vetoed by EPA." Id. The federal defendants' acknowledge that the plaintiff "may allege procedural injury based on its notice and comment claims," id., but assert that deprivation of a procedural right without some concrete interest affected by the deprivation is insufficient to create standing. Id. The plaintiff, however, asserts that "being subject to this additional, illegal process is itself sufficient injury for standing purposes," Pl.'s Opp'n re: Dismiss at 40, an injury which in turn is "threatening the financial viability of proposed mining projects." Id. The plaintiff further alleges that the delays in the permitting process its members have experienced are attributable to the EC Process and that a favorable decision—declaring the EC Process and Guidance Memorandum illegal—would redress the injuries its members are incurring. Id. at 41-42.

The Court agrees that the procedural injury alleged by the plaintiff is more than just that stemming from the claimed notice and comment violations. While the plaintiff does allege notice and comment violations, its main point of contention is that the additional process created by the EPA's actions has and will continue to cause its members "injury that is concrete and particularized." Id. at 39; see id. (asserting that the "EC Process Memoranda have allowed [the] Defendants to restart and pause the clock with respect to Section 404 permit applications pending on March 31, 2009, even in instances where [the] EPA did not comment during the Corps' designated comment period"). As noted above, on the record currently before the Court, it seems clear that the EPA has imposed additional processes—the MCIR Assessment and the EC Process—to the permitting procedures, and that these additional processes are not contemplated or set forth in the 404(b)(1) guidelines. It also appears that the Guidance Memorandum is being applied in a binding manner. There is therefore support for both the plaintiff's allegations of injury in the form of notice and comment violation and, more importantly so far as standing is

concerned, in the form of "additional, illegal process." Pl.'s Opp'n re: Dismiss at 39. Thus, on the record currently before it, and in light of the fact that "at the pleading stage, general factual allegations of injury resulting from the defendant's conduct may suffice," Bennett, 520 U.S. at 168, the Court can and does conclude that at this stage of the proceedings the plaintiff's allegations are sufficient to establish that it has standing to maintain this suit.

IV. The Plaintiff's Motion for a Preliminary Injunction

A. Standard of Review

District courts have the power to grant preliminary injunctions under Rule 65 of the Federal Rules of Civil Procedure. Fed. R. Civ. P. 65. As a general matter, preliminary injunctions are "extraordinary" forms of relief and should be granted sparingly. Mazurek v. Armstrong, 520 U.S. 968, 972 (1997). "An injunction is designed to deter future wrongful acts," United States v. W.T. Grant Co., 345 U.S. 629, 633 (1953), and thus, while past harm is relevant, the ultimate inquiry remains "whether there is a real and immediate threat of repeated injury." D.C. Common Cause v. District of Columbia, 858 F.2d 1, 8-9 (D.C. Cir. 1988).

In evaluating a motion for preliminary injunctive relief, courts must balance: "(1) the [movant's likelihood] of success on the merits; (2) the threat of irreparable injury in the absence of an injunction; (3) the possibility of substantial harm to other interested parties from the issuance of an injunction; and (4) the interests of the public." Wagner v. Taylor, 836 F.2d 566, 575 (D.C. Cir. 1987). Although a particularly strong showing on one factor may compensate for a weak showing on one or more of the other factors, id. at 576, the movant must show that the threat of irreparable harm is "likely," as opposed to just a "possibility." Winter v. Natural Res. Def. Council, Inc., 555 U.S. 7 (2008).

B. Legal Analysis

1. Likelihood of Success on the Merits

Unsurprisingly, the plaintiff argues that it is likely to succeed on the merits of its claims. The plaintiff first asserts that the EC Process Memoranda and the Guidance are legislative rules that were promulgated in violation of the APA. Pl.'s PI Mem. at 12. The plaintiff further maintains that the EPA has exceeded its statutory authority under the Clean Water Act, the National Environmental Policy Act, and the APA. Id. at 24.

a. Whether The EPA's Actions are Legislative Rules

As previously noted, the standard for determining whether an agency pronouncement is a legislative rule is very similar to the second element of the Bennett finality analysis. A legislative rule is agency action that has "the force and effect of law." Appalachian Power, 208 F.3d at 1020. Such a rule "grant[s] rights, impose[s] obligations, or produce[s] other significant effects on private interests;" "narrowly constrict[s] the discretion of agency officials by largely determining the issue addressed"; and "[has] substantive legal effect." Batterton v. Marshall, 648 F.2d 694, 701-02 (D.C. Cir. 1980). A rule that effectively amends a prior legislative rule is a legislative, not an interpretative rule. Am. Mining Cong. v. Mine Safety & Health Admin., 995 F.2d 1106, 1112 (D.C. Cir. 1993). "[N]ew rules that work substantive changes . . . or major substantive legal additions . . . to prior regulations are subject to the APA's procedures." U.S. Telecom Ass'n v. FCC, 400 F.3d 29, 34-35 (D.C. Cir. 2005) (citations omitted). If an agency adopts a new position inconsistent with an existing regulation, or effects a substantive change in the regulation, notice and comment are required. Id. at 35.

As explained above in regard to the Court's finality analysis, based on the record currently before the Court the MCIR Assessment, the EC Process Memoranda, and the Guidance

Memorandum all appear to qualify as legislative rules because they seemingly have altered the permitting procedures under the Clean Water Act by changing the codified administrative review process. Thus, the MCIR Assessment, the EC Process, and the Guidance Memorandum all seem to "effectively amend" the Clean Water Act's permitting process, Am. Mining Cong., 995 F.2d at 1112, and represent the EPA's adoption of a new position inconsistent with an existing regulation. U.S. Telecom Ass'n, 400 F.3d at 34-35. The plaintiff has therefore established that it is likely to succeed on the merits of its claim that the challenged EPA actions are legislative rules that were adopted in violation of the APA's notice and comment requirements.

b. Whether The EPA Exceeded its Statutory Authority

Under the APA, courts must hold unlawful and set aside agency actions found to be in excess of the agency's statutory jurisdiction, authority, or limitations. 5 U.S.C. § 706(2)(C). To determine whether an agency exceeded its statutory authority under the APA, the Court must engage in the two-step inquiry adopted by the Supreme Court in Chevron U.S.A, Inc. v. Natural Res. Def. Council, 467 U.S. 837 (1984). Under Chevron, if the text of a statute shows that Congress has directly addressed the question at issue, then the court and the agency must give effect to the clearly expressed intent of Congress. See id. at 842-43. If, however, the court determines that an agency's enabling statute is silent or unclear with respect to the issue at hand, the question for the court then becomes whether the agency's action is based on a permissible construction of the statute. See id. at 843.

The plaintiff maintains that the EPA and the Corps are violating the plain language of the Clean Water Act. Pl.'s PI Mem. at 25. Specifically, it alleges that the MCIR Assessment and the EC Process Memoranda violate the congressional statutory division of authority between the two agencies as set forth in Section 404 of the Clean Water Act because they improperly expanded

the EPA's role in Section 404 permitting decisions. Id. Similarly, the plaintiff maintains that the Guidance Memorandum requires permitting authorities to require adherence to the conductivity levels designated in the Guidance Memorandum, thus resulting in the EPA overstepping the authority it was granted under Section 303 of the Clean Water Act. Id. at 28. By promulgating this region-wide water quality standard and by applying it to Section 404 permits, in addition to Section 402 permits, the plaintiff asserts that the EPA has significantly exceeded its statutory authority. Id. at 30-31.

The federal defendants respond that the Clean Water Act authorizes coordination between the EPA and the Corps during the permit review process and expressly requires the agencies to enter into an agreement to facilitate such coordination. Defs.' PI Opp'n at 23. They contend that nothing more than this has been done and assert that the Corps remains the final decision-maker with respect to issuance of permits, subject only to the EPA's exercise of its 404(c) veto authority. Id. at 24.

Again, for reasons that mirror its finality analysis, the Court finds the plaintiff's arguments more persuasive and agrees that the plaintiff is likely to prevail on its claim that the EPA has exceeded its statutory authority. As to the MCIR Assessment, the EPA, and only the EPA, evaluates pending permits to determine if they will be subject to the EC Process. Pl.'s PI Mem. at 8. It seems clear, however, that Congress intended the EPA to have a limited role in the issuance of Section 404 permits, and that nothing in Section 404 of the Clean Water Act gives the EPA the authorization to develop a new evaluation or permitting process which expands its role. Likewise, it seems clear that with the implementation of the Guidance Memorandum the EPA has encroached upon the role carved out for the states under the Clean Water Act by setting region-wide conductivity standards. In short, the EPA has modified the Section 404 permitting

scheme, authority not granted to it under the Clean Water Act, and has similarly taken an expansive role beyond what was afforded to it in determining Section 303 Water Quality Standards. Accordingly, the plaintiff has also established that it will likely succeed in showing that the EPA has exceeded its statutory authority under the Clean Water Act by adopting and implementing the MCIR Assessment, the EC Process, and the Guidance Memorandum.

2. Threat of Irreparable Harm

A preliminary injunction should issue only when irreparable injury is likely to occur in the absence of an injunction. See Brady Campaign to Prevent Gun Violence v. Salazar, 612 F. Supp. 2d 1, 12 (D.D.C. 2009) (explaining that the Supreme Court in Winter rejected as sufficient for the purpose of acquiring a preliminary injunction the plaintiff's showing of a "possibility" of irreparable harm). The failure to demonstrate irreparable harm is "grounds for refusing to issue a preliminary injunction, even if the other three factors entering the [preliminary injunction] calculus merit such relief." Chaplaincy of Full Gospel Churches v. England, 454 F.3d 290, 297 (D.C. Cir. 2006). "[P]roving 'irreparable' injury is a considerable burden, requiring proof that the movant's injury is 'certain, great and actual—not theoretical—and imminent, creating a clear and present need for extraordinary equitable relief to prevent harm.'" Power Mobility Coal. v. Leavitt, 404 F. Supp. 2d 190, 204 (D.D.C. 2005) (Walton, J.) (quoting Wis. Gas Co. v. FERC, 758 F.2d 669, 674 (D.C. Cir. 1985)) (emphasis in original). In this Circuit, it is "well settled that economic loss does not, in and of itself, constitute irreparable harm." Wis. Gas Co., 758 F.2d at 674. However, economic loss that threatens the survival of the movant's business can amount to irreparable harm. Power Mobility Coal., 404 F. Supp. 2d at 204.

Here, the plaintiff asserts that its members face likely irreparable harm in three respects: (1) its "small business members are likely to be driven out of business by the delays in permitting

. . . resulting from the Guidance"; (2) its "members are likely to incur substantial economic losses as a result of [additional] permit[ting] conditions being imposed under the Guidance [Memorandum]"; and, (3) "the EC Process and Guidance [Memorandum] are impermissibly interfering with the exercise of private property rights." Pl.'s PI Mem. at 35-36.

The federal defendants counter all three of these arguments. First, they point out that the president of Best Coal, whose declaration the plaintiff offers to support its small business argument, fails to satisfy the irreparable harm standard because it merely states that his "company will be out of business within [eighteen] months if" it does not receive the requisite mining permits. Defs.' PI Opp'n at 30, 33. Second, the federal defendants assert that the alleged economic losses identified by the plaintiff are "compliance costs," *id.* at 35, and that the plaintiff has not demonstrated these costs threaten the survival of the plaintiff's member's businesses to the degree required to overcome this Circuit's rule that economic losses do not constitute irreparable harms. *Id.* at 35-36. Third, the federal defendants argue that a finding by this Court that the type of environmental regulations at issue in this case amount to an infringement on property rights would "create de facto irreparable harm across much of the field of environmental regulation, given that environmental regulations often place conditions on the use of private property." *Id.* at 38-39. Lastly, the federal defendants contend that the plaintiff's "delay in seeking injunctive relief, though not dispositive, can 'militate against a finding of irreparable harm.'" *Id.* at 40 (quoting Mylan Pharm., Inc. v. Shalala, 81 F. Supp. 2d 30, 44 (D.D.C. 2000)).

The Court agrees with the federal defendants' position that the plaintiff has not shown that its small business members face irreparable harm in the form of certain or imminent business closings due to delays in receiving permits caused by the Guidance Memorandum. In

Power Mobility Coalition, a case in which a national association whose membership included manufacturers and suppliers of motorized wheelchairs sought an injunction enjoining enforcement of the Department of Health and Human Services regulations that changed the reimbursement structure under Medicare for motorized scooters, 404 F. Supp. 2d at 192, this Court held that the plaintiff had not demonstrated that the new regulation would cause any of its members irreparable harm as a result of being forced out of business. Id. at 205. There, this Court considered a declaration from the president of one member company in which he stated that "'if the new rule take[s] effect as planned . . . [it is anticipated] that Mr. Mobility will wind-down its operations and stop doing business as a supplier of mobility equipment in [five or six months].'" Id. at 204 (quoting Declaration of Philip DeLernia). The Court determined that because the plaintiff was "basically predicting that many of their claims for reimbursement" would be denied, the "plaintiff's claim of imminent harm [was], at best, remote and speculative." Id. at 205.

Here, as the federal defendants aptly recognize, the plaintiff's only support for its claim that its small business members will be driven out of business by the permitting delays being occasioned by the EPA's actions is the declaration of Randy Johnson, president of Best Coal, Inc.¹⁰ Mr. Johnson asserts that

[o]ur company is in a crisis. We want to finish our [ten] year plan but we are not mining the tonnage sufficient to support even our equipment payments. We survived to this point in 2010 with cash from prior years profit but that cash is now gone. We literally exist from week to week. We have cost[s] that cannot be recovered if the NPDES and Section 404 permits are not issued. Today, we are mining every possible ton to pay our employees, vendor bills, and bank note payments. If these permits are not issued, we will be out of business within [eighteen] months.

¹⁰ Indeed, this small business argument consumes only two paragraphs of the plaintiff's 45-page memorandum in support of its motion for a preliminary injunction, and is not mentioned whatsoever in its reply in support of its motion for a preliminary injunction. See Pl.'s PI Mem. at 37.

Pl.'s PI Mem., Ex. 4 (Declaration of Randy Johnson ("R. Johnson Decl.")) ¶ 19. Mr. Johnson further maintains that (i) the company's total lost revenue from 2009 and 2010 was nearly \$6.7 million; (ii) the company laid off five of its twenty-eight employees; and (iii) the company will likely need to lay off more employees and "sell[] equipment to lower [its] cost[s] and loan debt in the very near future." Pl.'s PI Mem. at 37 (quoting R. Johnson Decl. ¶ 18). Although, Mr. Johnson claims that Best Coal has lost revenues totaling \$6,686,751, Pl.'s PI Mem., Ex. 4 (R. Johnson Decl.) ¶ 18, he does not offer a projection of anticipated future losses, tie that to an accounting of the company's current assets, or explain with any specificity how he arrived at the conclusion that he would be forced out of business in eighteen months.

While Mr. Johnson's representations raise legitimate concerns about the current and future health of his company, his declaration falls short of what is necessary to merit a finding of irreparable harm. Much like the plaintiff in Power Mobility Coalition, the plaintiff here is offering nothing more than a "predict[ion]" that is "at best, remote and speculative." 404 F. Supp. 2d at 205. Something more than Mr. Johnson's conclusory projection is necessary to show that any of the plaintiff's small business members currently face certain, imminent business closings. Accordingly, there is no "clear and present need for extraordinary equitable relief to prevent harm." Id. at 204 (quoting Wis. Gas Co., 758 F.2d at 674).

Likewise, the Court finds that the plaintiff has not shown to the degree required by law that its members are likely to incur substantial economic losses as a result of the additional permitting conditions imposed by the Guidance Memorandum. While it is true that "if a movant seeking a preliminary injunction 'will be unable to sue to recover any monetary damages against' a government agency in the future because of, among other things, sovereign immunity, financial loss can constitute irreparable injury," Pl.'s PI Mem. at 38 (quoting Brendsel v. Office of Fed.

Hous. Enter. Oversight, 339 F. Supp. 2d 52, 66-67 (D.D.C. 2004), the fact that economic losses may be unrecoverable does not absolve the movant from its "considerable burden" of proving that those losses are "certain, great and actual." Power Mobility Coal., 404 F. Supp. 2d at 204 (quoting Wis. Gas Co., 758 F.2d at 674) (emphasis in original).

Although this Circuit has not specifically addressed the issue of how recoverability of economic losses should fit into the irreparable harm analysis, this Court has confronted the issue and repeatedly held that recoverability of the claimed losses is but one element for consideration. First, in Bracco Diagnostics, Inc. v. Shalala, 963 F. Supp. 20 (D.D.C. 1997), a case in which medical device manufacturers sought a preliminary injunction to enjoin FDA action, the Court found that the "plaintiffs' greater financial costs, which are on-going, can never be recouped. Id. at 29. The Court went on to find that while the injury to plaintiffs was 'admittedly economic,' there [wa]s 'no adequate compensatory or other corrective relief' that [could] be provided at a later date, tipping the balance in favor of injunctive relief." Id. (quoting Hoffmann-Laroche, Inc. v. Califano, 453 F. Supp. 900, 903 (D.D.C. 1978)) (finding that "[t]he possibility that adequate compensatory or other corrective relief will be available at a later date, in the ordinary course of litigation, weighs heavily against a claim of irreparable harm"). In Bracco, however, the court also determined that the plaintiffs had shown "two primary sources of non-speculative, on-going, and imminent harm." 963 F. Supp. at 28-29. Next, although this Court held in Feinerman that "where . . . the plaintiff in question cannot recover damages from the defendant due to the defendant's sovereign immunity, . . . any loss of income suffered by the plaintiff is irreparable per se," Feinerman v. Bernandi, 558 F. Supp. 2d 36, 51 (D.D.C. 2008) (Walton, J.) (emphasis in original), the Court also recognized that "the alleged injury must be of such imminence that there is a clear and present need for equitable relief to prevent irreparable harm." Id. at 50 (quoting

Wis. Gas Co., 758 F.2d at 674). Lastly, in Sherley v. Sebelius, 704 F. Supp. 2d 63 (D.D.C. 2010), a case in which the plaintiffs sought to enjoin the Department of Health and Human Services from applying National Institute of Health guidelines regarding the funding of medical research that used embryonic stem cells, the Court concluded "[t]here is no after-the-fact remedy for this injury because the Court cannot compensate plaintiffs for their lost opportunity to receive funds Accordingly, plaintiffs would suffer irreparable injury in the absence of the injunction." Id. at 72. However, earlier in its opinion, the court noted that "[f]irst . . . the alleged injury must be of 'such imminence that there is a 'clear and present need' for equitable relief to prevent irreparable harm [and s]econd, the plaintiff's injury 'must be beyond remediation.'" Id. (quoting Wis. Gas Co., 758 F.2d at 674) (emphasis in original). Bracco, Feinerman, and Sherley demonstrate that recoverability of monetary losses can, and should, have some influence on the irreparable harm calculus, but that recoverability is but one factor the court must consider in assessing alleged irreparable harm in the form of economic losses. In other words, the mere fact that economic losses may be unrecoverable does not, in and of itself, compel a finding of irreparable harm.¹¹

If a plaintiff has shown that financial losses are certain, imminent, and unrecoverable, then the imposition of a preliminary injunction is appropriate and necessary; here, however, the

¹¹ Moreover, the Tenth Circuit case cited by the plaintiff in its memorandum supporting its motion for a preliminary injunction seems to confirm this conclusion. Although the court in Chamber of Commerce v. Edmondson, 594 F.3d 742, 770-71 (10th Cir. 2010), found that "imposition of monetary damages that cannot later be recovered for reasons such as sovereign immunity constitutes irreparable injury," it cited as authority for that finding an earlier Tenth Circuit case which determined that "[a]n irreparable harm requirement is met if a plaintiff demonstrates a significant risk that he or she will experience harm that cannot be compensated after the fact by monetary damage." Id. at 771 (quoting Greater Yellowstone Coal. v. Flowers, 321 F.3d 1250, 1258 (10th Cir. 2003)) (emphasis added). Edmondson can be further distinguished from the plaintiff's situation in this case because it dealt with the actual imposition of fines on businesses that failed to comply with a state law on the employment of illegal immigrants, i.e., the actual payment of money by the plaintiff to the authority from which it was then unrecoverable, whereas here, the plaintiff claims that the injury is economic loss due to (1) delay in continuing or starting mining projects, and (2) in one instance, the cost of conducting additional tests to comply with the Guidance.

plaintiff has not demonstrated the certainness or the imminence of any of its members' losses. In fact, and perhaps most importantly to this discussion of the role of recoverability in the irreparable harm calculus, the plaintiff has not even shown that the losses are wholly unrecoverable. While the plaintiff has correctly asserted that it cannot recover economic losses in the form of money damages from the EPA and the Corps due to sovereign immunity, the plaintiff has not demonstrated how or why these losses cannot ultimately be recovered if and when the mining projects in question are permitted to proceed. See Defs.' PI Surreply at 4 (recognizing that the Higgins Declaration, Pl.'s Opp'n re: Dismiss, Ex. 24 (Declaration of James C. Higgins ("Higgins Decl.") ¶ 9, itself asserts that the resolution of this case in favor of the plaintiff would allow reinstatement of his company's mining plans, and arguing that this would allow the company to recoup all or most of the alleged lost revenue).¹²

Nonetheless, even assuming arguendo that the purported losses are totally beyond remediation, the plaintiff has still not shown that they are imminent or certain. The Court has no reason to doubt Mr. Higgins's assertion that the "coal mined from the Paynter Branch South Mine could have produced revenues of about \$189 million at today's current sales price," Pl.'s Opp'n re: Dismiss, Ex. 24 (Higgins Decl.) ¶ 8, or his statement that "other costs . . . as a result of [the decision to forego the removal of the coal reserves at Paynter Branch South Mine] include the costs of relocating two spreads of equipment, . . . the relocation of about 20 employees to other mines[,] and the severing of about 20 employees," id., Ex. 24 (Higgins Decl.) ¶ 8. These,

¹² Mr. Higgins is the Chief Engineer for Simmons Fork Mining, Inc. and provides services to Paynter Branch Mining, which operates the Paynter Branch South Mine in West Virginia and whose Section 404 permit application is one of those subject to review under the EC Process. Pl.'s Opp'n re: Dismiss, Ex. 24 (Higgins Decl.) ¶¶ 1, 5. Mr. Higgins asserts that since January 2010, Paynter Branch Mining has gathered water quality data in an attempt to meet the conductivity level set forth in the Guidance, an endeavor that has cost it \$114,000. Id., Ex. 24 (Higgins Decl.) ¶ 7. Mr. Higgins further maintains that the permitting delays have rendered infeasible proceeding with the Paynter Branch South Mine project, forcing Paynter Branch Mining to forego the retrieval of coal reserves from that mine. Id., Ex. 24 (Higgins Decl.) ¶ 8.

however, are examples of past harm, resulting from a decision made before this case ever reached this Court. Mr. Higgins does not provide any information on currently planned or future projects in jeopardy or at risk of incurring losses.¹³ While the plight of the workers allegedly fired by Paynter Branch Mining purportedly due to the delay in the permitted process is unfortunate, that does not change the fact that "the purpose of an injunction is the prevent future violations." W.T. Grant Co., 345 U.S. at 633 (emphasis added). Thus, while past harm is relevant, the ultimate inquiry remains, "'whether there is a real and immediate threat of repeated injury.'" District of Columbia Common Cause, 858 F.2d at 8-9 (quoting O'Shea v. Littleton, 414 U.S. 488, 496 (1974) (emphasis added). Accordingly, whether or not they may ultimately be recovered, the plaintiff has not shown that there is a threat of future substantial losses that warrant the imposition of the "extraordinary" remedy of injunctive relief. Mazurek, 520 U.S. at 972.

To conclude its examination of the plaintiff's allegations of irreparable harm, the Court need merely state that it agrees with the federal defendants that the plaintiff's argument that the EC Process and Guidance are impermissibly interfering with the exercise of private property rights is "baseless." Defs.' PI Opp'n at 38. Indeed, the cases relied upon by the plaintiff do not support a finding that enforcement of the type of environmental regulations at issue here qualify as an infringement on the property interests of the plaintiff's members. See RoDa Drilling Co. v. Siegal, 552 F.3d 1203, 1211 (10th Cir. 2009) (finding that the record clearly established that

¹³ The same is true of the re-mining projects described in the declaration of William Wells, the Vice President of United Coal Company. Pl.'s PI Mem., Ex. 9 (Declaration of William Wells, Jr.) ¶¶ 25-26. But even assuming, for the sake of argument, that Mr. Wells had identified pending future losses, it is unclear that the losses would be of the magnitude required in this Circuit to warrant the imposition of injunctive relief, i.e., the losses would threaten the survival of the business. See Power Mobility Coal., 404 F. Supp 2d at 204 (observing that only economic loss that threatens the survival of a movan'ts business amounts to irreparable harm); Defs.' PI Opp'n at 36 & 36 n.20 (noting that although the Wells declaration does not provide a numeric figure or describe the losses purportedly suffered from the decision to forego the reclamation project, United Coal's revenues totaled more than \$500 million in 2008).

RoDa was being denied its right to interest in its real property because it had been "denied unfettered ownership" due to the defendant's refusal to transfer record title, and concluding that "while being denied record title, RoDa simply cannot participate in the everyday operations of its own interests, and the damages arising from that are incalculable"); Pelfresne v. Village of Williams Bay, 865 F.2d 877, 883 (7th Cir. 1989) (in a suit seeking to bar demolition of buildings on the plaintiff's land, the court noted that "[a]s a general rule, interference with the enjoyment or possession of land is considered irreparable [because] land is viewed as a unique commodity for which monetary compensation is an inadequate substitute," but found that a similar rule should not necessarily apply to buildings located on a piece of real estate as buildings, unlike land, can be repaired or replaced). Clearly, these two cases do not present issues even remotely comparable to those presented in this case.

While the plaintiff's assertion that a preliminary injunction "in this case will do nothing more than restore the regulatory environment that existed prior to the unlawful application of the EC Process and the Guidance to coal mining operations," Pl.'s PI Mem. at 41, may be true, the fact remains that the plaintiff has made an inadequate showing of irreparable harm. The issuance of a preliminary injunction to "restore" the previously existing regulatory environment would not be in line with the purposes of injunctive relief, as the ultimate inquiry would still remain "whether there is a real and immediate threat of repeated injury." D.C. Common Cause, 858 F.2d at 8-9.

3. Possibility of Substantial Harm to Other Interested Parties

Having concluded that a showing of irreparable harm is lacking, it is not necessary to engage in a lengthy discussion of the remaining two factors, see Chaplaincy of Full Gospel Churches, 454 F.3d at 297 (holding that the failure to demonstrate harm provides "grounds for

refusing to issue a preliminary injunction, even if the other three factors entering the [preliminary injunction] calculus merit such relief"), and the Court will therefore address them only briefly.

See id. at 304-05 (observing that "[i]t is of the highest importance to a proper review of the action of a court in granting or refusing a preliminary injunction that there should be fair compliance with [Federal Rule of Civil Procedure] 52(a)," which provides that when denying a preliminary injunction a district court "shall . . . set forth the findings of fact and conclusions of law which constitute the grounds of its action." Fed. R. Civ. P. 52(a)).

The plaintiff maintains that a preliminary injunction in this case will not harm the federal defendants or the defendant intervenors as it "will do nothing more than restore the regulatory environment that existed prior to the" MCIR Assessment, the EC Process, and the Guidance Memorandum. Pl.'s PI Mem. at 41. Both the federal defendants and the defendant intervenors, on the other hand, assert that "significant environmental interests are at stake here." Defs.' PI Opp'n at 41. While it may be true that the challenged EPA actions were "designed to significantly reduce the harmful environmental consequences of Appalachian surface coal mining operations, while ensuring that future mining remains consistent with federal laws," id., these environmental interests—the actual environmental impact of surface mining—are not currently before the Court. It may well be the case that the MCIR Assessment, the EC Process, and the Guidance Memorandum are necessary to protect the environment, especially considering the assertion made by counsel for the defendant intervenors that the substantive requirements of the Clean Water Act were essentially ignored by the prior Administration, but the Court need not make that assessment now. Whether the current or the prior Administration's actions are in compliance with the APA and the Clean Water Act is an inquiry that can be left for another day. And the most the Court can say about whether other interested parties would be harmed by the

issuance of an injunction is that none of the parties before the Court, based on the record currently before it, have made a sufficiently compelling case to tip the scales in their favor.

4. The Interests of the Public

The plaintiff maintains that a preliminary injunction is in the public interest as it would protect "the integrity of the administrative regulatory process" and because the public has a strong interest in developing domestic sources of energy and job growth. Pl.'s PI Mem. at 42-43. On the other hand, the federal defendants assert that the public interest is served by allowing the Corps and the EPA to complete their review and consideration of permit applications in a thoughtful and considered manner. Defs.' PI Opp'n at 42. The Court, however, finds neither of these arguments determinative of whether preliminary injunctive relief should be granted in this case.

V. Conclusion

For the above reasons, the federal defendants' motion to dismiss and the plaintiff's motion for a preliminary injunction are both **DENIED**.¹⁴

_____/s/_____
Reggie B. Walton
United States District Judge

¹⁴ The Court has issued a contemporaneous Order consistent with this Memorandum Opinion.

Macara
Lousberg/DC/USEPA/US

01/19/2011 02:28 PM

To Joel Corona

cc Matthew Klasen

bcc

Subject Fw: WPS help? -- Fw: OSM request for EPA's
CWA/economic assistance on stream protection rule
(volunteers?)

Joel - I'm interested in your reaction/thoughts to the email string below. (b) (5)

Macara

----- Forwarded by Macara Lousberg/DC/USEPA/US on 01/19/2011 02:27 PM -----

From: Matthew Klasen/DC/USEPA/US
To: Macara Lousberg/DC/USEPA/US@EPA
Cc: Gregory Peck/DC/USEPA/US@EPA, Denise Keehner/DC/USEPA/US@EPA
Date: 01/19/2011 09:30 AM
Subject: WPS help? -- Fw: OSM request for EPA's CWA/economic assistance on stream protection rule
(volunteers?)

Hi Macara,

I sent the following note around to a cross-OW (and OGC) group that's working to review the Office of
Surface Mining's stream protection rule, (b) (5)

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 01/19/2011 09:26 AM -----

From: Matthew Klasen/DC/USEPA/US
To: Brian Frazer/DC/USEPA/US@EPA, Elaine Suriano/DC/USEPA/US@EPA, Jim
Pendergast/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Justin
Wright/DC/USEPA/US@EPA, Ross Geredien/DC/USEPA/US@EPA, Sharmin
Syed/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, Christopher
Hunter/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Denise Keehner/DC/USEPA/US@EPA, Gregory
Peck/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Kevin
Minoli/DC/USEPA/US@EPA
Date: 01/09/2011 08:19 PM
Subject: OSM request for EPA's CWA/economic assistance on stream protection rule (volunteers?)

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

OSM Regulatory Impact Analysis.101610.pdf

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

▼ Matthew Klasen---11/26/2010 12:29:41 PM---Hi everyone,

From: Matthew Klasen/DC/USEPA/US

To: Gregory Peck/DC/USEPA/US@EPA, Jim Pendergast/DC/USEPA/US@EPA, Ross Geredien/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, Elaine Suriano/DC/USEPA/US@EPA, Justin Wright/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Brian Frazer/DC/USEPA/US@EPA, Sharmin Syed/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Denise Keehner/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA

Date: 11/26/2010 12:29 PM

Subject: FYI: Key conclusions from OSM's draft stream protection rule reg impact analysis

Hi everyone,

(b) (5) [Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Thanks,

Matt

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**Matthew
Klasen/DC/USEPA/US**
01/19/2011 03:47 PM

To Gregory Peck, Karyn Wendelowski, Kevin Minoli
cc
bcc
Subject Fw: Draft Spring Branch Documents

FYI -- here's the draft letter on the Spring Branch ECP project in WV, which Region 3 discussed on yesterday morning's call.

Brian should be following up with an update on where this is in the process. I'll start taking a look now and send along any comments I have to this group.

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
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cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 01/19/2011 03:46 PM -----

From: Brian Frazer/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/19/2011 03:45 PM
Subject: Fw: Draft Spring Branch Documents

Matt - As discussed, attached is the Spring Branch briefing paper and draft letter. I will check with BT to find out where we are in the review process.

bf

Brian M. Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1652

----- Forwarded by Brian Frazer/DC/USEPA/US on 01/19/2011 03:43 PM -----

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 04:08 PM
Subject: Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.

ATTACHMENT REDACTED - DELIBERATIVE



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc



SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Jim
Pendergast/DC/USEPA/US
01/19/2011 04:20 PM

To Kristie Moore, Robert Brown
cc Brian Frazer, Christopher Hunter
bcc
Subject Re: Weekly Budget and Strategic Plan Update

Kristie -- This completes the suite of Q&As owed by WD to you.

Chris & Brian -- I cut and pasted from the Spruce press release and summary statement.

Jim Pendergast
Associate Director, Wetlands Division (MC 4502T)
Wetlands Division, Oceans & Watersheds, OW
US EPA
202-566-0398 (phone)



Spruce Mine Q&A.docx

ATTACHMENT REDACTED - DELIBERATIVE

Kristie Moore	FY12 President's Budget -- Revised Program Pr...	01/10/2011 08:05:07 AM
From:	Kristie Moore/DC/USEPA/US	
To:	Yu-Ting Guilaran/DC/USEPA/US@EPA, Christopher Zabawa/DC/USEPA/US@EPA, Darrell Brown/DC/USEPA/US@EPA, Sharon-E Hayes/DC/USEPA/US@EPA, John McShane/DC/USEPA/US@EPA, Betsy Valente/DC/USEPA/US@EPA, Bernice Smith/DC/USEPA/US@EPA, Nell Orscheln/DC/USEPA/US@EPA, Jim Pendergast/DC/USEPA/US@EPA	
Cc:	Robert Brown/DC/USEPA/US@EPA, Barbara Chancey/DC/USEPA/US@EPA, Tanya Code/DC/USEPA/US@EPA, Benita Best-Wong/DC/USEPA/US@EPA, Joe Piotrowski/R3/USEPA/US@EPA	
Date:	01/10/2011 08:05 AM	
Subject:	Weekly Budget and Strategic Plan Update	

FY12 President's Budget -- Revised Program Project Fact Sheets (PPFS) -- Due COB Today

On Friday afternoon we received our final budget numbers from OCFO. For Programs that were impacted by the passback decisions, please try to get your revised PPFS to Bob and me by COB today. Thank you for those we've already received.

FY12 President's Budget Q&As -- Due January 19 or January 26

Bob sent out a request for Press Conference and Hearing fact sheets. Please plan to send your 1-page Q&A to Bob and me by January 19 if your Q&A is for the Press Conference/Administrator's briefing book or by January 26 if your Q&A is for an up-coming hearing. ("Action -- 10:00 1/6 & COB 1/19 -- FY12 Budget Press Conference and Hearing Preparations"). Below is a list of fact sheets we are expecting:

Administrator/Press Conference -- Due 1/19:

- *319 -- decrease of funding.
- *319 -- What is the impact of the new requirement (still haven't received policy guidance from OW to see if this requirement is still included.)
- *MRB -- decrease in funding
- *MTM -- What is EPA doing in its Clean Water Act review of coal mining to ensure that energy and economic goals are met while protecting the environment?
- *MTM -- What is the status of EPA's veto of the Spruce No. 1 Mine permit?

Hearing Q&A -- Due 1/26:

- *Chesapeake Bay TMDL (coordinating with Region 3)

- *MRB -How is EPA responding to the need to reduce nutrient loads from the Mississippi River Basin?
- *SF Bay -- SF Bay vs. Estuary (Region is preparing this Q&A)
- *SF Bay -- Pace of obligating \$s (Region is preparing this Q&A)
- *SWANCC/Rapanos -- What regulatory or other action EPA is in the process of taking or could consider taking in response to SWANCC and Rapanos decisions?
- *SWANCC/Rapanos -- What waters remain protected under the Clean Water Act (CWA) after the Supreme Court's 2001 SWANCC and 2006 Rapanos decisions that have limited the scope of waters of the U.S.?
- *Fill Rule --Changes to Fill Rule
- *Lake C -- Status of TMDL (Region is preparing this Q&A)
- *Lake C -- Do issues remain regarding the award of grants to support Lake Champlain activities? (Region is preparing this Q&A)
- *LIS EIS -- OCPD and Region coordinate on this Q&A
- *NOP -- What is EPA doing to implement its roles as part of the National Ocean Council?
- *Puget Sound -- What is the status of awarding previous years' Puget Sound funding? (Region is preparing this Q&A)
- *CCS & MPRSA -- ???

Jim
Pendergast/DC/USEPA/US
01/19/2011 04:24 PM

To Tanya Code
cc
bcc
Subject Re: Action: Q&As for LPJ at SEPW hearing on Feb 2 - due tomorrow

And here is Spruce Mine



Spruce Mine Q&A.docx

ATTACHMENT REDACTED - DELIBERATIVE

Matthew
Klasen/DC/USEPA/US
01/19/2011 05:18 PM

To: Cliff Rader
cc
bcc
Subject: Fw: Draft Spring Branch Documents

Let me know if you have any thoughts. Brian is going to get back to me about where things are in the review process, after he talks to some folks.

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780

(b) (6)

----- Forwarded by Matthew Klasen/DC/USEPA/US on 01/19/2011 05:18 PM -----

From: Brian Frazer/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/19/2011 03:45 PM
Subject: Fw: Draft Spring Branch Documents

Matt - As discussed, attached is the Spring Branch briefing paper and draft letter. I will check with BT to find out where we are in the review process.

bf

Brian M. Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1652

----- Forwarded by Brian Frazer/DC/USEPA/US on 01/19/2011 03:43 PM -----

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 04:08 PM
Subject: Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc



SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

ATTACHMENTS REDACTED - DELIBERATIVE

Gregory Peck/DC/USEPA/US

01/20/2011 12:05 PM

To Matthew Klasen

cc Kevin Minoli, Karyn Wendelowski, MichaelG Lee

bcc

Subject Re: Fw: Draft Spring Branch Documents

Matt:

I've attached some minor edits to both documents.

Thanks !



Mining_ECP_Briefing Paper_SpBrNo3 1-11-11 - gep-mk edits.doc



Mining_IAP_401_Certification_Recommendations_8-13 gep-mk edits.doc

Greg

ATTACHMENTS REDACTED - DELIBERATIVE

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

202-564-5778

Matthew Klasen

Sorry, I knew that Mike was the right person, but...

01/20/2011 10:37:37 AM

From: Matthew Klasen/DC/USEPA/US
To: Kevin Minoli/DC/USEPA/US@EPA
Cc: Gregory Peck/DC/USEPA/US@EPA, Karyn Wendelowski/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA
Date: 01/20/2011 10:37 AM
Subject: Re: Fw: Draft Spring Branch Documents

Sorry, I knew that Mike was the right person, but I'm still on Kevin-Karyn autopilot from Spruce.

Attached are my comments on both the Spring Branch briefing paper and the letter. (b) (5)
[REDACTED]. My edits are primarily designed for clarity, and a lot of it is rearranging the briefing paper and the letter so it makes more sense.

(b) (5)
[REDACTED]

[REDACTED] II.

(b) (5)

Thanks,
Matt

[attachment "Mining_ECP_Briefing Paper_SpBrNo3 1-11-11 - mk.doc" deleted by Gregory Peck/DC/USEPA/US] [attachment "SpBrNo3 end of 60 day letter 1-11-11 JMedits - mk.doc" deleted by Gregory Peck/DC/USEPA/US]

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Kevin Minoli

Thanks. Mike actual does our permit specific re...

01/19/2011 06:51:18 PM

From: Kevin Minoli/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA, Karyn Wendelowski/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA
Date: 01/19/2011 06:51 PM
Subject: Re: Fw: Draft Spring Branch Documents

Thanks. Mike actual does our permit specific reviews (we decided today we need an OGC 404 cheat sheet because our divisions are confusing), but we would be happy to talk tomorrow.

Gregory Peck

Thanks Matt. Karyn/Kevin - (b) (5)

01/19/2011 05:10:15 PM

From: Gregory Peck/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Karyn Wendelowski/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Date: 01/19/2011 05:10 PM
Subject: Re: Fw: Draft Spring Branch Documents

Thanks Matt.

Karyn/Kevin - (b) (5)

Would be helpful to catch up with you on this.

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.

Washington, D.C. 20460

202-564-5778

Matthew Klasen

FYI -- here's the draft letter on the Spring Branch...

01/19/2011 03:47:58 PM

From: Matthew Klasen/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Karyn Wendelowski/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA
Date: 01/19/2011 03:47 PM
Subject: Fw: Draft Spring Branch Documents

FYI -- here's the draft letter on the Spring Branch ECP project in WV, which Region 3 discussed on yesterday morning's call.

Brian should be following up with an update on where this is in the process. I'll start taking a look now and send along any comments I have to this group.

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 01/19/2011 03:46 PM -----

From: Brian Frazer/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Date: 01/19/2011 03:45 PM
Subject: Fw: Draft Spring Branch Documents

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bf

Brian M. Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1652

----- Forwarded by Brian Frazer/DC/USEPA/US on 01/19/2011 03:43 PM -----

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To: Brian Topping/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 04:08 PM
Subject: Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.

[attachment "Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc" deleted by Gregory Peck/DC/USEPA/US] [attachment "SpBrNo3 end of 60 day letter 1-11-11 JMedits.doc" deleted by Gregory Peck/DC/USEPA/US]

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Greg Pond/R3/USEPA/US
01/20/2011 01:31 PM

To: Cynthia Stahl
cc: Jennifer Fulton, Louis Reynolds, Margaret Passmore
bcc:
Subject: Re: some aquatic resources questions and data questions

oops, I had lat/long on the bio tab, but left it out on the chemistry tab. Here is the corrected file. (b) (5)

Easier to talk Wed when I have time to look closer.



WFPF (DEP) data for Cynthia.xls

Greg Pond
Office of Monitoring and Assessment
U.S. EPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0243
(f) 304-234-0260
pond.greg@epa.gov
Website: <http://epa.gov/reg3esd1/3ea50.htm>

Cynthia Stahl

Thanks Greg! You ARE the man! (b) (5)

01/20/2011 12:40:03 PM

From: Cynthia Stahl/R3/USEPA/US
To: Greg Pond/R3/USEPA/US@EPA
Cc: Jennifer Fulton/R3/USEPA/US@EPA, Louis Reynolds/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA
Date: 01/20/2011 12:40 PM
Subject: Re: some aquatic resources questions and data questions

Thanks Greg! You ARE the man! (b) (5)

AND, I will work on getting a videoconference set up for Wed and Thursday if possible. Thanks. Cynthia

Cynthia H. Stahl, Ph.D.
Environmental Scientist
phone: 215-814-2180
fax: 215-814-5718
email: stahl.cynthia@epa.gov

Mailing address:
3EA10
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103

Greg Pond

Cynthia--Im hoping we can do a video conferenc...

01/20/2011 11:21:25 AM

From: Greg Pond/R3/USEPA/US
To: Cynthia Stahl/R3/USEPA/US@EPA
Cc: Louis Reynolds/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA, Jennifer Fulton/R3/USEPA/US@EPA
Date: 01/20/2011 11:21 AM
Subject: Re: some aquatic resources questions and data questions

Cynthia--Im hoping we can do a video conference.

(b) (5)





cc:ing and bringing Jen Fulton into the loop.

Greg Pond
Office of Monitoring and Assessment
U.S. EPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0243
(f) 304-234-0260
pond.greg@epa.gov
Website: <http://epa.gov/reg3esd1/3ea50.htm>

Cynthia Stahl

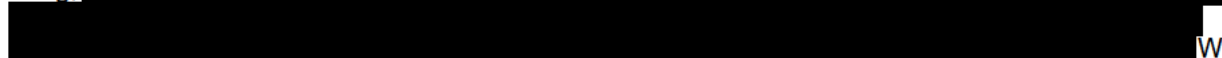
Greg, (b) (5)

...

01/20/2011 10:50:53 AM

From: Cynthia Stahl/R3/USEPA/US
To: Greg Pond/R3/USEPA/US@EPA
Cc: Louis Reynolds/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA
Date: 01/20/2011 10:50 AM
Subject: Re: some aquatic resources questions and data questions

Greg, (b) (5)



We can have a more detailed discussion next Wed about that. When I get out of this training today, I'll try to set up the logistics for next Wed. If you guys have video conferencing capability, that may actually be best (although I told John F that we could just do phone and webinar) -- but I have to check whether our equipment is available here. C

Cynthia H. Stahl, Ph.D.

Environmental Scientist
phone: 215-814-2180
fax: 215-814-5718
email: stahl.cynthia@epa.gov

Mailing address:
3EA10
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103

Greg Pond

Thanks Lou. (b) (5)

01/19/2011 02:21:51 PM

From: Greg Pond/R3/USEPA/US
To: Louis Reynolds/R3/USEPA/US@EPA
Cc: Cynthia Stahl/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA
Date: 01/19/2011 02:21 PM
Subject: Re: some aquatic resources questions and data questions

Thanks Lou.

(b) (5)

Greg Pond
Office of Monitoring and Assessment
U.S. EPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0243
(f) 304-234-0260
pond.greg@epa.gov
Website: <http://epa.gov/reg3esd1/3ea50.htm>

Louis Reynolds

Cynthia, (b) (5)

01/19/2011 02:04:15 PM

From: Louis Reynolds/R3/USEPA/US
To: Cynthia Stahl/R3/USEPA/US@EPA
Cc: Greg Pond/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US
Date: 01/19/2011 02:04 PM
Subject: Re: some aquatic resources questions and data questions

Cynthia,

(b) (5)

Lou

Lou Reynolds
USEPA Region III
Freshwater Biology Team
1060 Chapline St. Ste. 303
Wheeling, WV 26003-2995
P 304-234-0244
F 304-234-0260

Cynthia Stahl

Looks like the hypothetical mine will definitely be...

01/19/2011 12:36:49 PM

From: Cynthia Stahl/R3/USEPA/US
To: Greg Pond/R3/USEPA/US@EPA
Cc: Louis Reynolds/R3/USEPA/US@EPA
Date: 01/19/2011 12:36 PM
Subject: Re: some aquatic resources questions and data questions

(b) (5)
(b) (5)



Cynthia H. Stahl, Ph.D.
Environmental Scientist
phone: 215-814-2180
fax: 215-814-5718
email: stahl.cynthia@epa.gov

Mailing address:
3EA10
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103

Greg Pond

see comments in bold. Greg Pond Office of Moni...

01/19/2011 08:20:32 AM

From: Greg Pond/R3/USEPA/US
To: Cynthia Stahl/R3/USEPA/US@EPA
Cc: Louis Reynolds/R3/USEPA/US@EPA
Date: 01/19/2011 08:20 AM
Subject: Re: some aquatic resources questions and data questions

see comments in bold.

Greg Pond
Office of Monitoring and Assessment
U.S. EPA Region 3
1060 Chapline Street, Suite 303
Wheeling, WV 26003-2995
(p) 304-234-0243
(f) 304-234-0260

pond.greg@epa.gov
Website: <http://epa.gov/reg3esd1/3ea50.htm>

Cynthia Stahl

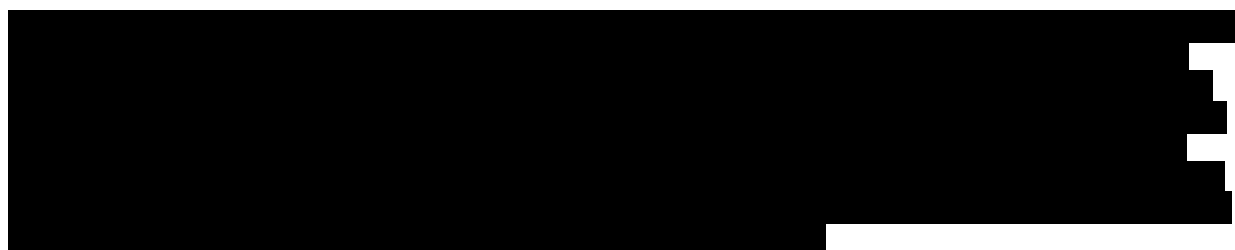
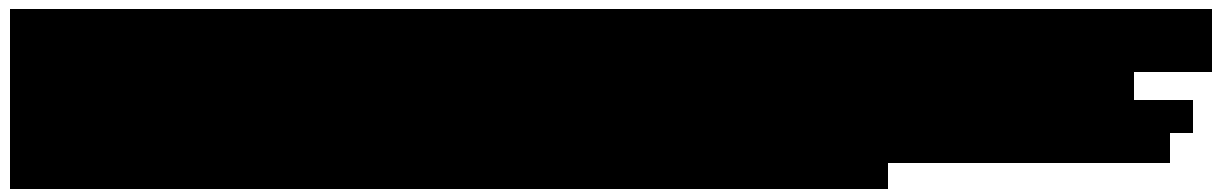
Hi Greg and Lou, I talked with Maggie this morni...

01/18/2011 03:57:42 PM

From: Cynthia Stahl/R3/USEPA/US
To: Greg Pond/R3/USEPA/US@EPA, Louis Reynolds/R3/USEPA/US@EPA
Date: 01/18/2011 03:57 PM
Subject: some aquatic resources questions and data questions

Hi Greg and Lou, I talked with Maggie this morning and she told me that I should talk to both of you.

(b) (5)

A large rectangular area of the email body is completely redacted with a solid black box.A large rectangular area of the email body is completely redacted with a solid black box.A large rectangular area of the email body is completely redacted with a solid black box.

I'll be in a mining training course tomorrow and Thursday but I'll be checking email, etc. in between. Just trying to multi-task. Would you let me know of the data availability and your availability? Thanks! Cynthia

Cynthia H. Stahl, Ph.D.
Environmental Scientist
phone: 215-814-2180
fax: 215-814-5718
email: stahl.cynthia@epa.gov

Mailing address:
3EA10
U.S. Environmental Protection Agency Region III
1650 Arch Street
Philadelphia, PA 19103

[illegible]

Jim
Pendergast/DC/USEPA/US
01/20/2011 03:55 PM

To: Kristie Moore
cc
bcc
Subject: Fw: Spruce

Replacement for Spruce Q&A. Sorry. I thought Brian couldn't do it so I wrote it yesterday. Julia's is better.

----- Forwarded by Jim Pendergast/DC/USEPA/US on 01/20/2011 03:55 PM -----

From: Brian Frazer/DC/USEPA/US
To: "Jim Pendergast" <Pendergast.Jim@epamail.epa.gov>
Cc: "Julia McCarthy" <McCarthy.Julia@epamail.epa.gov>
Date: 01/20/2011 03:45 PM
Subject: Fw: Spruce

Jim - I'm not going to have a chance to review this until later this evening. I asked Julia to draft a Spruce Q&A for SEPW hearing.

Can you review and let Julia know if you have any comments. Thx

Julia - Thanks you for drafting the Q&A.

bf

Brian Frazer
Chief, Wetlands & Aquatic Resources Regulatory Branch
O:202-566-1652
C:202-379-6906

Sent from my BlackBerry Wireless Handheld
Julia McCarthy

----- Original Message -----

From: Julia McCarthy
Sent: 01/20/2011 10:40 AM MST
To: Brian Frazer
Subject: Re: Spruce

Hey Brian,
Here's what I put together. Let me know if there's any changes or additions you need. Also, I put you and Chris as the contacts.
Cheers,
Julia



ATTACHMENT REDACTED - DELIBERATIVE

Spruce No1 Mine 1-20-11 Admin fact book.docx
Julia McCarthy
on detail to USEPA Headquarters
Office of Wetlands, Oceans and Watersheds
(202) 566-1660
mccarthy.julia@epa.gov

A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a connection of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal.

Conservation is our effort to understand and preserve this capacity. ~Aldo Leopold

Brian Frazer

Julia - Here is an example of the WUS fact sheet...

01/20/2011 11:22:33 AM

From: Brian Frazer/DC/USEPA/US
To: Julia McCarthy/R8/USEPA/US@EPA
Date: 01/20/2011 11:22 AM
Subject: Spruce

Julia - Here is an example of the WUS fact sheet. Can you pull together one on the Spruce mine.

[attachment "Waters of the US - 1-14-11 Admin fact book .docx" deleted by Julia McCarthy/R8/USEPA/US]

Thanks,

bf

Here is the question we were given.

MTM: What is the status of EPA's veto of the Spruce No. 1 Mine permit?

Brian M. Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds
U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1652

Matthew
Klasen/DC/USEPA/US
01/21/2011 10:23 AM

To Brian Frazer
cc Christopher Hunter, "Brian Topping", Gregory Peck,
MichaelG Lee, Karyn Wendelowski, Kevin Minoli
bcc
Subject Re: Fw: Draft Spring Branch Documents

OK, thanks Brian.

Chris and Brian: Attached are the edits that Greg and I are suggesting on this. (b) (5)

[REDACTED]

[REDACTED]

Mike: Do you have an update on whether OGC will have additional edits to this?

Thanks,
Matt



Mining_IAP_401_Certification_Recommendations_8-13 gep-mk edits.doc



Documents Withheld-FOIA(b)(5)

Mining_ECP_Briefing Paper_SpBrNo3 1-11-11 - gep-mk edits.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Matt's Narrative Assessment / Explanation for Edits

(b) (5)

[REDACTED]

[REDACTED]

Brian Frazer

Matt. - I'm out of the office today, however, can y...

01/21/2011 09:30:21 AM

From: Brian Frazer/DC/USEPA/US

To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US, "Brian Topping" <Topping.Brian@epamail.epa.gov>
Date: 01/21/2011 09:30 AM
Subject: Re: Fw: Draft Spring Branch Documents

Matt. - I'm out of the office today, however, can you send your comments to Brian and Chris. They will incorporate your comments on top of our comments. Also, we'll wait to hear back from OGC before we send the letter back to the region.

Thanks,

bf

Brian Frazer
Chief, Wetlands & Aquatic Resources Regulatory Branch
O:202-566-1652
C:202-379-6906

Sent from my BlackBerry Wireless Handheld

Matthew Klasen

----- Original Message -----

From: Matthew Klasen

Sent: 01/21/2011 08:34 AM EST

To: Brian Frazer

Subject: Re: Fw: Draft Spring Branch Documents

Hey Brian,

Just wanted to check in on process with Spring Branch. Greg and I took a look at these and have some edits, but wanted to figure out the best way to incorporate. OGC has been looped in but hasn't weighed in on these yet.

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Brian Frazer

Matt - As discussed, attached is the Spring Bran...

01/19/2011 03:45:04 PM

Jim
Pendergast/DC/USEPA/US
01/21/2011 11:07 AM

To Tanya Code
cc
bcc
Subject Fw: Spruce

Jim Pendergast, P.E.
Associate Director, Wetlands Division (MC 4502T)
Wetlands Division, Oceans & Watersheds, OW
US EPA
202-566-0398 (phone)

-----Forwarded by Jim Pendergast/DC/USEPA/US on 01/21/2011 11:06AM

To: Kristie Moore/DC/USEPA/US@EPA
From: Jim Pendergast/DC/USEPA/US
Date: 01/20/2011 03:55PM
Subject: Fw: Spruce

Replacement for Spruce Q&A. Sorry. I thought Brian couldn't do it so I wrote it yesterday.
Julia's is better.

----- Forwarded by Jim Pendergast/DC/USEPA/US on 01/20/2011 03:55 PM -----

From: Brian Frazer/DC/USEPA/US
To: "Jim Pendergast" <Pendergast.Jim@epamail.epa.gov>
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Brian Frazer
Chief, Wetlands & Aquatic Resources Regulatory Branch
O: 202-566-1652
C: 202-379-6906

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Julia McCarthy

----- Original Message -----

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To: Brian Frazer
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Cheers,

Julia

(See attached file: Spruce No1 Mine 1-20-11 Admin fact book.docx)

Julia McCarthy
on detail to USEPA Headquarters
Office of Wetlands, Oceans and Watersheds
(202) 566-1660
mccarthy.julia@epa.gov

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Brian Frazer---01/20/2011 11:22:33 AM---Julia - Here is an example of the WUS fact sheet.
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To: Julia McCarthy/R8/USEPA/US@EPA
Date: 01/20/2011 11:22 AM
Subject: Spruce

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[attachment "Waters of the US - 1-14-11 Admin fact book .docx" deleted by Julia McCarthy/R8/USEPA/US]

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bf

Here is the question we were given.

MTM: What is the status of EPA's veto of the Spruce No. 1 Mine permit?

Brian M. Frazer, Chief
Wetlands & Aquatic Resources Regulatory Branch
Office of Wetlands, Oceans and Watersheds

U.S. EPA
1200 Pennsylvania Avenue, NW (MC 4502T)
Washington, DC 20460
202-566-1652



- Spruce No1 Mine 1-20-11 Admin fact book.docx

ATTACHMENT REDACTED - DELIBERATIVE

Christopher
Hunter/DC/USEPA/US
01/21/2011 04:10 PM

To: Robert Klepp, Mahri Monson, Melissa Raack
cc
bcc
Subject: Fw: Revisions to Surface Coal Mining Guidance

Hello all,
I wanted to pass this meeting invite along as an FYI. We are beginning to discuss revising our April coal
(b) (5) and I
I'm
happy to discuss if you're interested.

Chris

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/21/2011 04:07 PM -----

Revisions to Surface Coal Mining Guidance

Tue 01/25/2011 2:00 PM - 3:00 PM

Location: TBD Rooms: 6300D-Kenai/DC-CCW-OW-WEST@EPA

Required:	Cliff Rader/DC/USEPA/US@EPA, Karyn Wendelowski/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, klasen.matthew@epa.gov, Marcus Zobrist/DC/USEPA/US@EPA, Tom Lavery/DC/USEPA/US@EPA
Optional:	Brian Frazer/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA

Description

(b) (5)

(b) (5)

If anyone in EPA could find a room large enough for this meeting, we can have it over there since I'm the only one in West.

Attached are also the draft summaries of comments received from the comment docket, split out by issue area. We're still waiting on 2 issue areas, which I will pass along when I have them.



101231_11_Overall_Comments-summary (draft)_10058.pdf



101231_2_Fed_Auth-summary (draft)_10058.pdf



101231_3_Science (draft)_10058.pdf



101231_4_Conductivity-summary (draft)_10058.pdf



101231_5_NPDES (draft)_10058.pdf



101231_6_CWA Section 404 (draft)_10058.pdf



101231_7_CWA Section 401 (draft)_10058.pdf



101231_8_NEPA (draft)_10058.pdf



101231_10_EconomicConsiderations-summary (draft)_10058.pdf

X. Economic Considerations

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of Economic Considerations includes those comments, recommendations, and opinions submitted by stakeholders regarding lost jobs or income, impacts to the national, state, or local/county economy, and general economic considerations.

There were a total of 12 tallied comments submitted to the docket as of December 1, 2010, discussing the economy. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, congressional delegates, and the general public. Most comments were received from private citizens or anonymous commenters. Figure 10-1 on the next page presents the total comment letters that address the economy by commenter category.

Private citizen (including anonymous stakeholders) comments are both in support with and in opposition to the Guidance. Those in support of the Guidance express the view that natural resources and the public health should outweigh economic considerations, including jobs. Those in opposition to the Guidance associate it with negative economic impacts both locally (i.e., at the individual level) and at a larger scale.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) is in general support of the Guidance but seeks clarification on Guidance implementation through a series of questions. Both groups contend that the Guidance may render mountaintop mining activities economically unfeasible, negatively impacting local economies and the industry and resulting in potential closures of mountaintop mining activities. They also make note of the Guidance's limited applicability to six states, which they contend will result in economic disparities. Questions from the Kentucky Energy and Environment Cabinet relate to economic concerns associated with lost job opportunities, geographic inequity of the Guidance applicability, and environmental justice for low-income, high-unemployment areas.

Below are summaries, presented by commenter category, on economic considerations. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

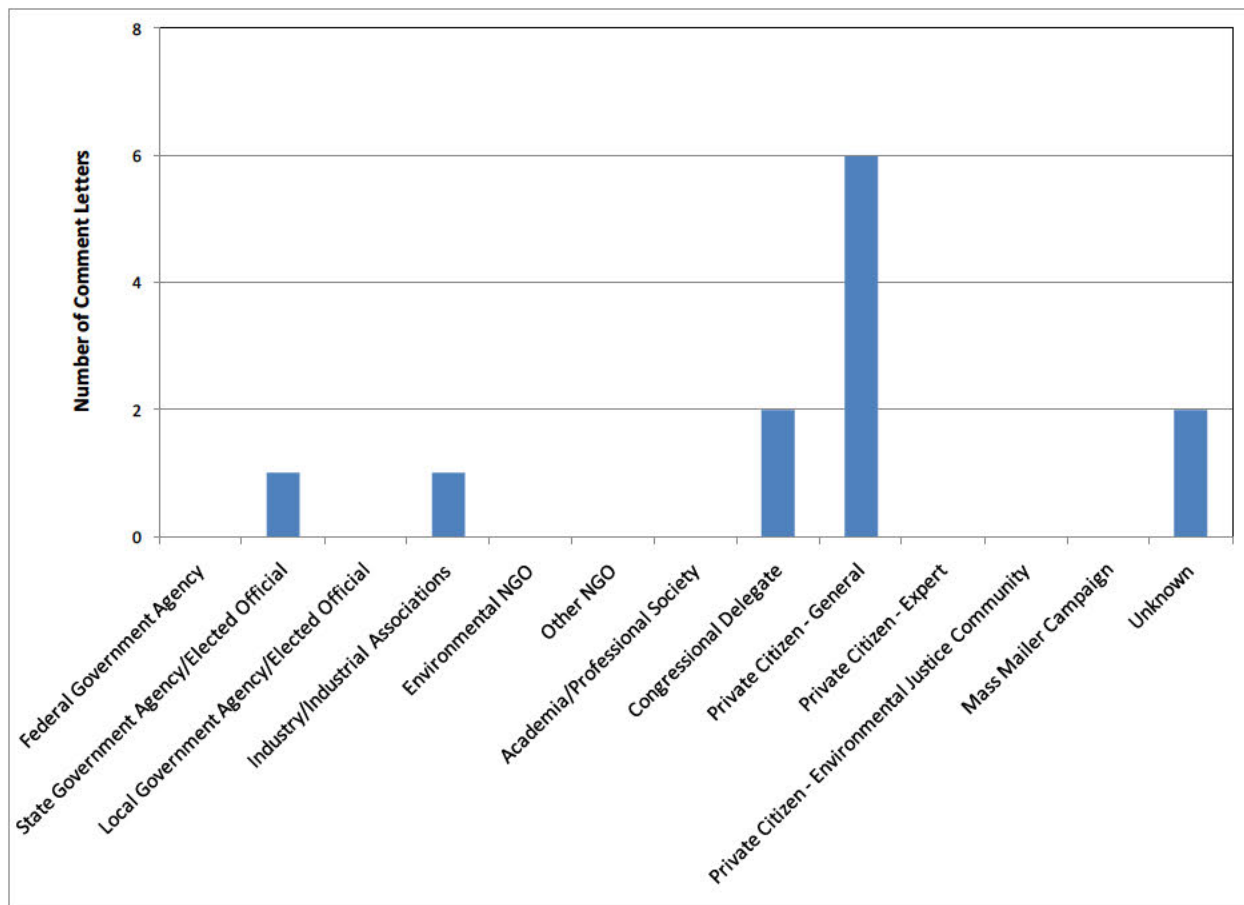


Figure 10-1. Economic Considerations, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations. They express concern that the Guidance is premature and may unnecessarily impact the economy.

a. Jobs Lost/Lost Income

The Kentucky Energy and Environment Cabinet is concerned that the Guidance may be premature and has the potential to cause more economic harm than good. They ask: “is there not

a potential for permit requirements to be imposed by U.S. EPA in the interim that are more restrictive or potentially more cost prohibitive than in the final guidance, resulting in job loss and economic hardship that could be avoided by waiting until the guidance is finalized. (p. 3)?”

c. Impacts to State Economy

The Kentucky Energy and Environment Cabinet points out that only six states (Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) are subject to the Guidance and speculate that the Guidance may be creating “economic inequity and a competitive disadvantage between the six targeted states and other coal producing states (p. 3)?”

e. General Economic Considerations

The Kentucky Energy and Environment Cabinet raises the issue of economic impacts to low-income areas of Appalachia. They acknowledge that “each Federal agency shall make achieving environmental justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (p. 4), and ask: “How does the potential elimination of high wage jobs for citizens living in low-income, high unemployment areas of Appalachia, factor into the EJ decision-making process?” (p. 4).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the economy. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance and argue that it will have negative economic impacts on the industry, resulting in potential closures of mountaintop mining activities.

a. Jobs Lost/Lost Income

Frost Brown Todd claim that the strict standards in the Guidance “will make most mining activities practically and economically infeasible” (p. 6). They further argue the Guidance focuses too much attention on community water supplies while ignoring “the potential severe harmful socio-economic effects that would be inflicted on low-income communities throughout Appalachia through the loss of employment” (p. 5).

b. Impacts to National Economy

Frost Brown Todd foresee impacts to the national economy, including loss of profits and resulting lawsuits against the federal government by the coal industry and property owners. They view the coal mining industry as “an essential part of our nation’s economic vitality and a key to our short- and long-term economic and energy security” (p. 9). They suggest the Guidance will cause significant loss of profits and lead to lawsuits filed by companies in the coal business and property owners to recover hundreds of billions of dollars of lost profits. They claim the Federal Government will be required to provide compensation for these lawsuits and “at such a tenuous financial time, this would have disastrous, wide-spread effects on our nation” (p. 7).

c. Impacts to State Economy

Frost Brown Todd point out that the Guidance focuses on eliminating a specific type of mining in only six states (Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) and argue: “This disparity creates dramatic economic inequities and puts these states and this industry at a crippling competitive disadvantage with industries in other states and regions. The result will be nothing less than catastrophic” (p. 8).

e. General Economic Considerations

Frost Brown Todd argue that the Guidelines “impose insurmountable technical and economic burdens on the coal mining industry, effectively shutting down surface coal mining (and possibly significant underground coal mining) throughout much of Central Appalachia” (p. 2). They further contend that EPA’s adaptive remedial action provision will “impose economically impracticable and technically unachievable mitigation requirements on them in perpetuity” (p. 8).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, and discuss economic considerations. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

a. Jobs Lost/Lost Income

Both letters express concern that the Guidance will jeopardize a significant number of jobs. For example, on letter states: “Permits issues under the Clean Water Act affect nearly 80,000 direct coal mining jobs in Appalachia” (Doc. #0015, p. 1).

b. Impacts to National Economy

The Guidance is specific to surface coal mining in Appalachia, and congressional delegates feel it “sorely fails to address the equally noble goal of economic fairness. The Appalachian states know all too well the challenges of economic inequity and any actions that would serve to further undermine the fragile economy of this region ought to be met with a robust federal effort to shore up and improve the economy” (Doc. #0011, p. 1).

d. Impacts to Local / County Economy

One letter argues that the Guidance will have a negative impact to the local economy and that “EPA has jeopardized the future of mining operations [and] the sustenance of local communities” (Doc. 0015, p. 1).

e. General Economic Considerations

Commenters express concern that the Guidance will have economic impacts to communities that have not had opportunity to provide input, as stated “with the country’s economy still

floundering and unemployment hovering near 10%, the potential economic impact of these policies validate our request that affected communities be given the opportunity to voice their concerns in the decision-making process” (Doc. #0015, p. 1).

9. PRIVATE CITIZEN - GENERAL

Seven comment letters, typically one page in length, submitted by members of the general public discuss economics. Two letters (Doc. #0019, and Doc. #0249) disagree with EPA’s Guidance, while the remaining general private citizen letters either support the Guidance or are opposed to mountaintop mining in general.

a. Jobs Lost/Lost Income

Commenters, both in support of and in disagreement with EPA’s Guidance, recognize it could impact the workforce. One commenter in disagreement with EPA’s Guidance is concerned “my daughter will not be able to attend college if my husband loses his job in mining” (Doc. #0019). Another commenter in general agreement with the Guidance states “I’m all for creating more jobs, and allowing people to use their land as they see fit. But I’m not going to let them trash what isn’t theirs –the water and air—in the process” (Doc. #0006, p. 1).

d. Impacts to Local / County Economy

One commenter in general opposition to the Guidance, is concerned that mines will be closed, small towns will be devastated, and residents will be forced to relocate: “my family and many others like us will have to leave our state to find work” (Doc. #0019).

e. General Economic Considerations

Many in the general public support the Guidance and hope it will be a “change to business as usual that places private profit above public resources” (Doc. #0088). Several commenters feel the protection of public health and waterways should outweigh economic concerns.

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

13. UNKNOWN

Two comment letters, both one page in length, received from unknown or unidentified commenters discuss the economy. One commenter is in general agreement with EPA's Guidance; the other is in general disagreement.

a. Jobs Lost/Lost Income

The commenter in general disagreement with the Guidance feels it has had a negative impact on the economy stating "our families were forced to leave to find work" (Doc. #0010). The same commenter further suggests the "true endangered species ... is the American worker."

d. Impacts to Local / County Economy

The commenter in support of the Guidance suggests people are being pushed from their homes by mining and argues that "property rapidly devalues due to mining activities nearby leaving poor people with few options" (Doc. #0183).

e. General Economic Considerations

The commenter opposed to EPA's Guidance feels it is a violation of states' rights and suggests "this administration does not care about the people of Appalachia and the industry that so many of us depend on to provide for our families" (Doc. 0010). This commenter feels individual states should be allowed to regulate water quality programs.

XI. Overall Comments

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Overall Comments issue includes those comments, recommendations, and opinions submitted by stakeholders in general support or opposition to the Guidance, and/or to mountaintop mining in general.

There were a total of 104 unique tallied comments posted by the docket as of December 1, 2010. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 11-1 on the next page presents the total comment letters that made an overall comment by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and commend EPA for issuing it; and are generally opposed to mountaintop mining in general. They argue that mountaintop mining activities are destructive of wildlife, forests, and streams, and have negative health impacts; and that the Guidance is based on sound science. The few private citizens in opposition to the Guidance express economic concerns. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters contend that the Guidance is legally flawed, will have negative economic impacts, and relies on insufficient scientific data and peer review. Congressional delegates argue that the Guidance was issued prematurely, will cost many jobs, and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club argues that the Guidance is based on sound scientific evidence and commends EPA for issuing it. The Kentucky Energy and Environment Cabinet highlights EPA's challenge of implementing existing requirements while protecting other interests, including the economy and energy supply.

Below are summaries of the overall comments, presented by commenter category. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline)

and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

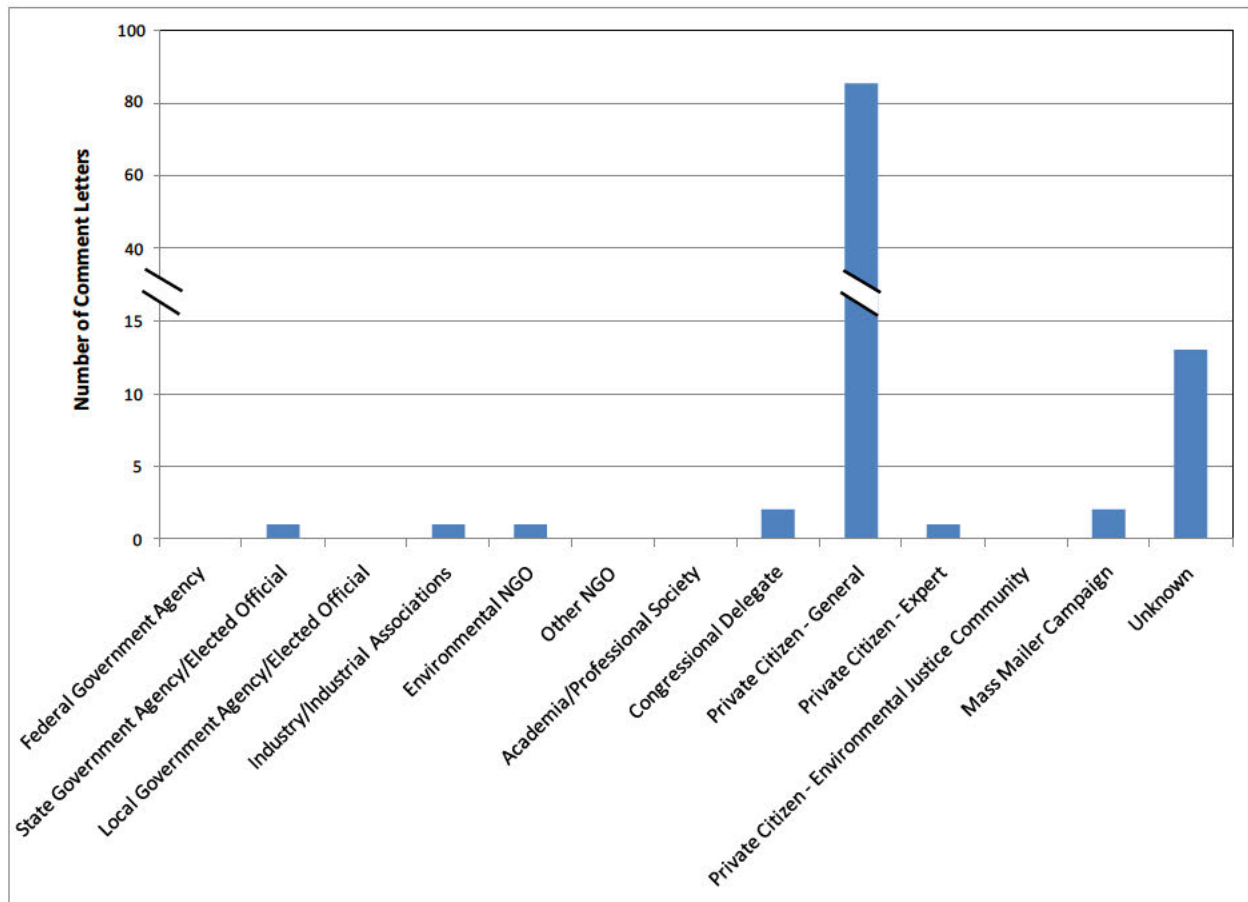


Figure 11-1. Overall Comments, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

a. General Support for the Guidance

The Kentucky Energy and Environment Cabinet agrees with EPA's commitment to developing environmentally effective, scientifically sound, and economically responsible approaches for

meeting existing requirements while not compromising the Appalachian region and depriving the entire nation of the benefits coal provides, both for the economy and energy supply.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

b. General Opposition for the Guidance

Frost Brown Todd argue that the Guidelines “impose insurmountable technical and economic burdens on the coal mining industry, effectively shutting down surface coal mining (and possibly significant underground coal mining) throughout much of Central Appalachia” (p. 2) and request the Guidelines be immediately withdrawn. The following several arguments are provided to support their request:

- “The Guidance Memorandum is legally flawed and imposes inappropriate requirements on the regulated community without following proper procedures” (p. 3);
- “EPA’s implementation of the Guidance threatens to effect unconstitutional taking of the property of mineral owners” (p. 6);
- “The April 1 Guidance Memorandum will create unnecessary confusion and uncertainty and treats the states, regions, and industries inequitably” (p. 7); and
- “The April 1 Guidance Memorandum relies on limited, questionable, and unproven scientific ‘data’ and analyses” (p. 8).

They further request EPA to “instruct the states, EPA regions, and other federal agencies not to implement or enforce any of the requirements contained therein” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on

EPA's Guidance. The Sierra Club (Doc. #0225.1) strongly supports the Guidance and commends EPA for issuing it.

a. General Support for the Guidance

The Sierra Club is of the opinion that the EPA was justified in implementing the Guidance immediately. They agree that the most recent, peer-reviewed scientific evidence was used as the basis for the Guidance and further state the Guidance is "necessary to protect water quality from the effects of mountaintop removal mining" (p. 2).

6. OTHER NGOS

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress and disagree with the Guidance. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

b. General Opposition for the Guidance

Both letters argue the Guidance was issued prematurely and urge EPA to withdraw it. Some congressional delegates (Doc. #0011) agree that regulations are necessary but suggest EPA "continue to work with the affected States, the involved federal agencies, and all stakeholders to develop guidelines that truly provide a balanced process for energy development and environmental protection" (p. 2).

9. PRIVATE CITIZEN - GENERAL

Eighty two comment letters, typically one page in length, were received from members of the general public. Two letters from private citizens (Doc. #0019, and Doc. #0249) disagree with EPA's Guidance. The remaining private citizen commenters either support the Guidance or are opposed to mountaintop mining in general.

a. General Support for the Guidance

The majority of the general public is in support of the Guidance and commends EPA for issuing it. Several commenters point out that mountaintop mining destroys wildlife, forests, and streams and are of the belief that the Guidance will help protect people and the environment from negative impacts of mountaintop mining. Many agree the Guidance has been based on the best available science and thank EPA for enforcing the CWA.

One commenter (Doc. #0009) sums up the feelings of the overall general public by saying, “I applaud the Environmental Protection Agency for setting a tough new policy that should protect waterways and communities from the destruction caused by mountaintop removal. The new policy represents the most significant administrative action ever taken to address mountaintop removal coal mining and reaffirms the administration’s commitment to science and environmental justice for the communities and natural areas of Appalachia.”

b. General Opposition for the Guidance

Both commenters in general opposition to the Guidance are concerned that mines will be closed, small towns will be devastated, additional poverty will be created, and residents will be forced to relocate. One comment letter states, “My family and many others like us will have to leave our state to find work (Doc. #0019).”

c. Opposed to Mining in General

Many in the general public are opposed to mining in general. Commenters argue it destroys natural resources and causes health problems. One commenter (Doc. #0020) states: “Please help bring an end to Mountaintop Removal. I just can’t believe this ever happened in the first place” (p. 2). Another commenter (Doc. #0025) points out that the profits earned by coal companies do not justify the negative impacts to people’s health and the environment and writes: “several billion dollars of income are earned by the coal companies but the costs to West Virginia alone amount to tens of billions of dollars in health costs and perhaps even larger amounts to the degradation of WV’s environment.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter (Doc. #0112) was submitted from a private citizen - expert commenting on the issue of federal authority to regulate these activities in EPA’s Guidance. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science, with more than three decades of experience in the public school system.

a. General Support for the Guidance

The commenter is in general agreement with the Guidance, concurring that there is unequivocal scientific evidence to supports the Guidance. The commenter is of the opinion that: “it is our duty as the most powerful species to exist on this planet to use our might to protect the integrity

of our life support systems for the benefit of all living things” (p. 1).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

a. General Support for the Guidance

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized. They agree the most recent, peer-reviewed scientific information documents that mountaintop mining negatively impacts water quality.

13. UNKNOWN

Thirteen comment letters, typically one page in length, were received from unknown or unidentified commenters. One commenter is in general disagreement with EPA’s Guidance; the others are in general agreement.

a. General Support for the Guidance

The majority of the commenters in general agreement with the Guidance feel it will help protect public health and water quality from the impacts of mountaintop mining. Many commenters also urge EPA to strengthen and finalize the Guidance.

b. General Opposition for the Guidance

The commenter in general disagreement with the Guidance argues it is based on “scientific studies that are limited in scope and analysis (Doc. #0010).” The commenter feels the individual states should be able to administer their own water quality programs and define what constitutes stream degradation. The commenter claims the Guidance is a violation of states’ rights.

II. Federal Authority to Regulate these Activities (Generally)

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of Federal Authority to Regulate these Activities includes those comments, recommendations, and opinions submitted by stakeholders regarding the relationship of the CWA, NEPA, and the Executive Order on Environmental Justice to the Surface Mine Coal Reclamation Act (SMCRA); as well as the authority, roles, and responsibility of federal and state agencies.

There were a total of 45 tallied comments submitted to the docket as of December 1, 2010, discussing federal authority to regulate these activities. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 2-1 on the next page presents the total comment letters that address the federal authority to regulate these activities issue by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and support EPA's regulatory authority. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters contend that the Guidance contradicts established authorities and regulatory structures, could create unfair precedents, and should be withdrawn. Congressional delegates argue that the Guidance represents substantial changes that exceed the intent of the "Acts" (i.e., CWA, NEPA, and SMCRA), and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club urges EPA to ensure prompt implementation of the Guidance at the state and federal levels. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which are related to Federal and State authorities.

Below are summaries, presented by commenter category, on the issue of federal authority to regulate these activities as it relates to the Guidance. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

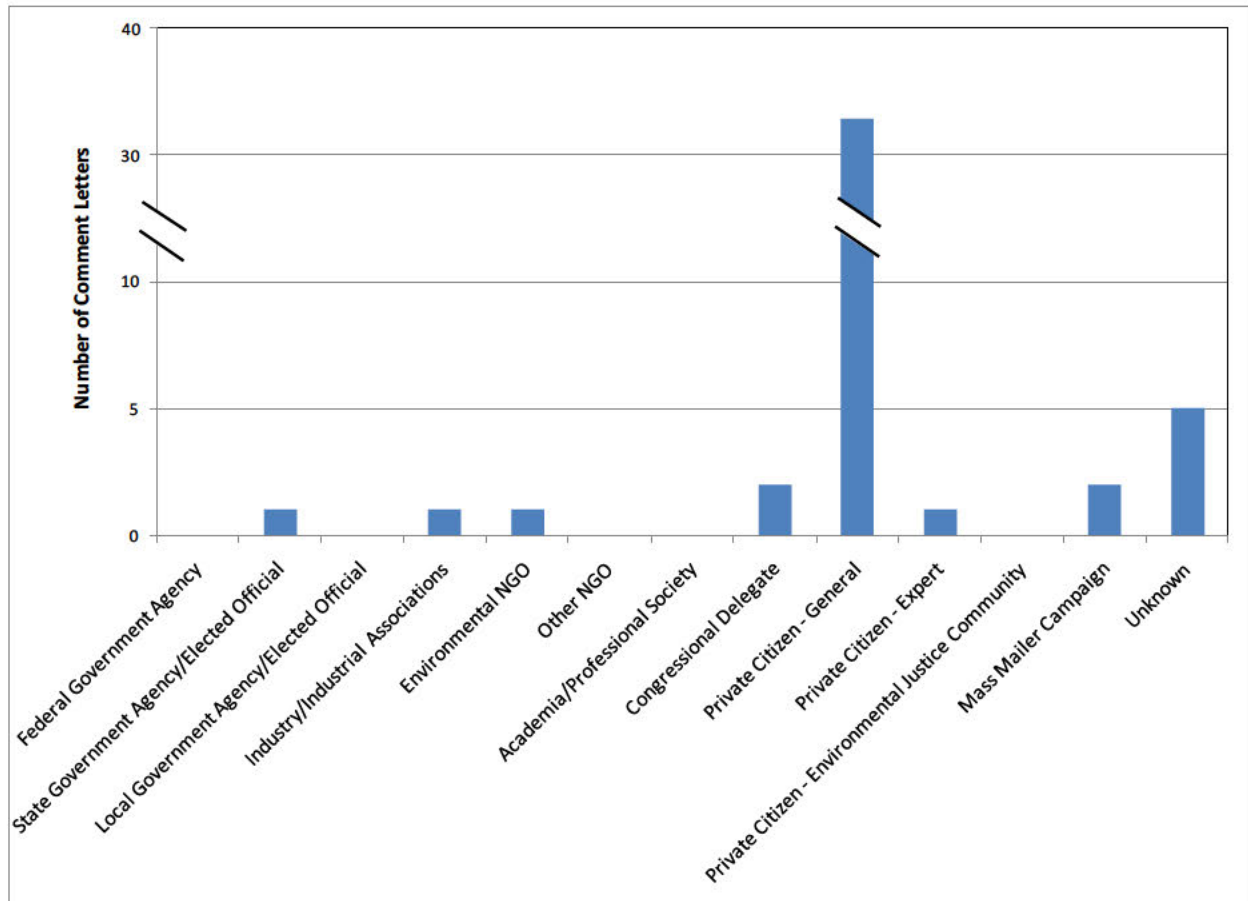


Figure 2-1. Federal Authority, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to SMCRA

The Kentucky Energy and Environment Cabinet would like a clarification on the term “mountain top mining” in the context of the SMRCA, which they state is different from surface coal mining operations in general (q. A.1). They ask if the Guidance is for mountaintop mining or for surface mining operations as a whole (q. B.8). Furthermore, they would also like to know if it is correct to assume that the Guidance does not apply to coal mining operations (q. A.2).

b. Authority, Role, and Responsibility of Federal and State Agencies

The Kentucky Energy and Environment Cabinet referenced the detailed Guidance – footnote 3 to state that it “does not impose legally binding requirements on EPA, the U.S. Army Corps of Engineers (Corps), the States, or the regulated community, and may not apply to a particular situation depending upon the circumstances.” They ask for clarification on the legal authority of the April 1, 2010 announcement and its associated references, with respect to delegated states’ implementation, and EPA oversight of state delegated CWA Section 402 permitting programs (q. A.6). They would also like to know if the interim final Guidance represents the final EPA determination subject to judicial review (q. A.7).

In addition, they are also asking if EPA will proactively continue to provide technical support in the future and if EPA will commit to providing additional CWA 106 funding to the Commonwealth, to address limited staff resources for permit reviews (q. A.19 and B.6).

Finally, they ask if the Guidance is limited to certain states and Appalachian eco-regions, and if so, to clarify the basis for applying the Guidance only to certain states (q. A.8 and A.17).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to SMCRA

With respect to federal authority, Frost Brown Todd claim that the Guidance is in contradiction with established authorities and regulatory structures, and could create precedents that may result in unfair treatment of all applications. Specifically, they state that the “methods through which EPA has instructed to its regions to enforce those requirements, violate the carefully balanced federal-state regulatory structure established by Congress under the CWA, the SMCRA, and related environmental laws” (p. 4). Frost Brown Todd further describe the Guidance as “heavy-handed requirements [that] not only contradict the long-established regulatory standards, authorities, and programs under the CWA, SMRCA and related statutes – they threaten to establish precedents that would undermine the consistent and fair application of those statutes to activities and industries throughout the United States” (p. 5).

b. Authority, Role, and Responsibility of Federal and State Agencies

Frost Brown Todd request that EPA withdraw its Guidance which they see as unlawful and confusing, and superseding legitimate authority from other agencies to regulate these activities. They also request that EPA instruct relevant agencies not to implement or apply the Guidance as it currently stands.

Specifically, Frost Brown Todd states that the Guidance is “inconsistent with EPA’s statutory authorities, and imposes an unconstitutional taking of property” (p. 2), and in violation of “the rights of the states and other federal agencies to exercise their own statutory authorities” (p. 6).

In addition, Frost Brown Todd would like EPA to “instruct all relevant state and federal agencies and EPA regions that the requirements of the Guidance are not to be implemented or applied under any circumstances until further notice; and not adopt any further requirements without the benefit of a full and fair public process, based upon input from all interested stakeholders, and in compliance with the requirements of notice-and-comment rulemaking” (p. 2).

Frost Brown Todd further claims that “EPA also seeks to supersede the Corps’ authority in administering the Section 404 permitting program and working with the states under Section 401” (p. 5). They also state that the Guidance “improperly presumes that NPDES general permits may not be used to authorize activities associated with coal mining” (p. 5) and that the Guidance itself will “create unnecessary confusion and uncertainty, and treats the states, regions, and industries inequitably” (p. 7).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of federal authority to regulate these activities in EPA’s Guidance. The Sierra Club (Doc. #0225) strongly supports the Guidance and commends EPA for issuing it.

b. Authority, Role, and Responsibility of Federal and State Agencies

Although not stating it directly, the Sierra Club supports the EPA's authority to regulate these activities in urging "EPA to make sure that its regional offices and other federal and state agencies adhere to the guidance and do not issue permits that are contrary to the Guidance" (p. 1).

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, and address the issue of federal authority. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to Surface Mining Control and Reclamation Act (SMCRA)

The letter signed by 23 congressional delegates (Doc. #0015) argues that guidance is usually issued to clarify or further explain an agency's interpretation of a statute or regulation, but that the April 1, 2010 Guidance appears to make substantive changes and exceeds the original intent of the Acts. Specifically, they identify changes to "three sections of the CWA, along with various provisions of the NEPA and the SMCRA" (p. 1). They further argue that with its "sweeping regulatory action far exceeds the intent of Congress under these Acts" (p. 1) and that they are "troubled by federal efforts to undermine Congressional intent on primary state regulatory authority under SMCRA and the CWA" (p. 2).

b. Authority, Role, and Responsibility of Federal and State Agencies

Both comment letters are opposed to EPA's Guidance, and argue that it usurps certain authorities. The letter signed by congressional delegates from Virginia and West Virginia (Doc.

#0011) criticizes the Guidance's restricted applicability to Appalachia and to surface coal mining operations. They state that "Not only is there no precedent for such an action, but it is also patently a wrong approach to implementing the CWA" (p. 1). The letter signed by 23 congressional delegates representing 14 States (Doc. #0015) criticizes the Guidance because it undermines the authority, roles, and responsibility from state agencies when reviewing and issuing mining permits: "Such a determination threatens the cooperative federalism system Congress created in both SMRCA and CWA" (p. 2). They further argue that under the CWA, States have "the power to design state-specific conditions to federal permits" (p. 2) and this approach "recognizes that state regulators at the local level are better equipped to interpret water quality standards and apply them to site-specific permits because they have in-depth knowledge of local watersheds, their conditions and their long-term plans for improvement" (p. 2).

9. PRIVATE CITIZEN - GENERAL

Thirty two comment letters, typically one page in length, submitted by members of the general public comment on the issue of federal authority to regulate these activities. All of the letters are in support of the Guidance and most of them applaud or thank the EPA for recognizing the need to address this issue.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to Surface Mining Control and Reclamation Act (SMCRA)

Six of the commenters state that this Guidance is valuable "to ensure that regional staff will finally follow CWA requirements." It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022).

b. Authority, Role, and Responsibility of Federal and State Agencies

Most commenters supported EPA's role in regulating these activities, and wished to encourage stronger authority. They urged EPA to "strengthen and finalize the guidance and make sure that its regional offices and other federal and state agencies adhere to the policy and do not issue permits that are contrary to the guidance." They also urged EPA to "assure state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance."

One commenter wishes to encourage federal agencies to "follow consistent and strict application of the rules and regulations that are otherwise turned over for enforcement by local/state EPA agencies (Doc. #0178)."

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted from a private citizen - expert commenting on the issue of federal authority to regulate these activities in EPA's Guidance. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching wildlife management and environmental earth science (Doc. #0112).

b. Authority, Role, and Responsibility of Federal and State Agencies

The commenter strongly supports the Guidance, commends EPA for issuing it, and urges EPA to “to ensure that regional staff will finally follow CWA requirements.”

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized.

b. Authority, Role, and Responsibility of Federal and State Agencies

The Sierra Club urges EPA to “strengthen and finalize the guidance and make sure that its regional offices and other federal and state agencies adhere to the policy and do not issue permits that are contrary to the guidance (Doc. #0103).” This statement is echoed by many general private citizens in their comment letters.

Earthjustice urges regional staff to follow the CWA requirements and urges EPA to “assure state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance (Doc. #0022).” Another exact statement made by many general private citizens in their comment letters.

13. UNKNOWN

Five comment letters received from unknown or unidentified commenters discuss federal authority to regulate these activities. Of the five comment letters, all but one letter (Doc. #0010) are in support of the Guidance.

b. Authority, Role, and Responsibility of Federal and State Agencies

Similar to the mass mailing campaign sponsored by Earthjustice, the four comment letters supporting the Guidance urge EPA not to issue permits that are “contrary to the guidance” or “contrary to the clear science and legal requirements discussed in the guidance.”

The comment letter in general opposition to the Guidance states that “EPA has no right dictating to the states how to administer their water quality programs and it is the states who shall determine what criteria is to be met (Doc. #0010).”

III. Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia issue includes those comments, recommendations, and opinions submitted from stakeholders regarding the scientific validity of material referenced in the Guidance, scientific materials not reviewed or referenced in the Guidance, the suitability of ecoregion use in the Guidance, scientific and technical recommendations for project review and monitoring, and the issue of insufficient scientific evidence or peer review in the Guidance.

There were a total of 45 tallied comments submitted to and posted by the docket as of December 1, 2010, discussing the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. These were submitted by different types of commenters, including a State agency, representatives of the mining industry, Congressional Delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 3-1 on the next page presents the total comment letters posted to the docket as of December 1, 2010, that addressed the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia issue by commenter category.

Most comments from private citizens and mass mailing campaigns support the validity of the scientific material referenced in the Guidance, and some argue for additional scientific research to further develop an understanding of the adverse impacts of valley fills. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) is in general support of the Guidance. Congressional delegates and industry comments focus on the aspect of scientific peer review with regard to the issuance of the Guidance, generally stating that there was not sufficient scientific peer review in the process, and thereby challenging the overall validity of the Guidance. The Commonwealth of Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions regarding the scientific validity of reports referenced in the Guidance, and whether there is sufficient scientific

evidence to support the Guidance, particularly requesting scientific evidence related to Kentucky.

Below are summaries, by commenter category, on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. Under each commenter category all sub-issues commented on are listed by letter (based on the issue outline) and discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

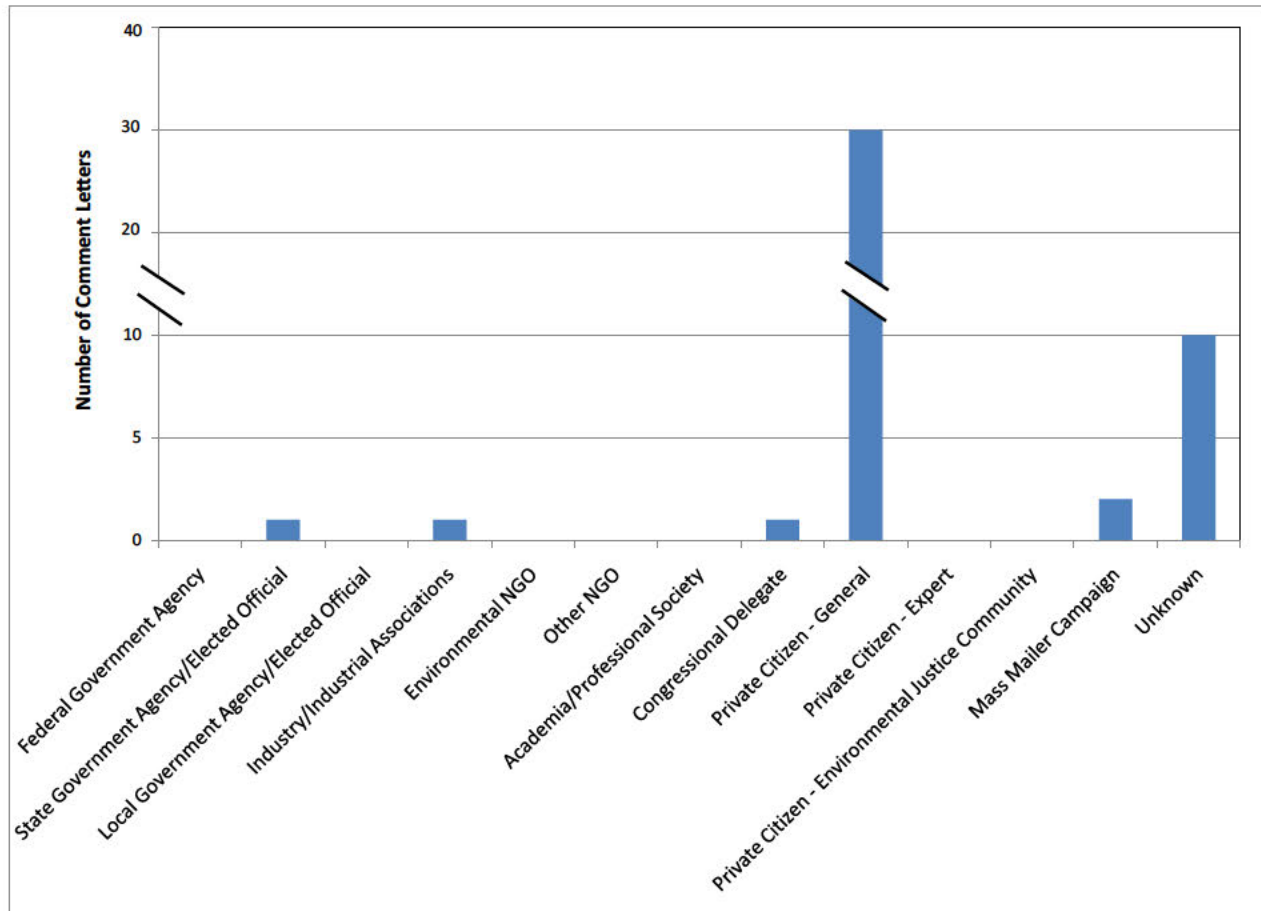


Figure 3-1. Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Commonwealth of Kentucky Energy and Environment Cabinet (Doc. #0012) was the only comment received from a state government agency or elected official commenting on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. The agency appears to be generally in support of the Guidance, but questions the scientific validity of reports referenced in the Guidance, and whether there is sufficient scientific evidence to support the Guidance. In particular the agency expresses interest in receiving documentation of scientific studies performed in Kentucky, as well as more details on its implementation: “I request that these inquiries be responded to expeditiously in writing given the CWA § 402 surface coal mining permit applications pending before the Commonwealth, and those that we continue to receive daily” (p. 1).

a. Scientific Validity of Material Referenced in Guidance

The Kentucky Energy and Environment Cabinet poses the following questions regarding the issue of Scientific Validity of Material Referenced in the Guidance:

- “10. At the top of page 3 [of the Guidance] it is stated that impairments related to surface coal mining have been ‘linked to contamination of surface water supplies and resulting health concerns.’ Does U.S. EPA have documentation and data specific to Kentucky that supports this statement? If so, what is that documentation and data?” (p. 3); and
- “23. In the middle of page 30, the guidance makes the statement that ‘it is EPA’s experience that projects that involve more than one mile of stream loss or more than one valley fill are likely to result in significant adverse impact.’ What documentation with respect to Kentucky did EPA rely upon in making this statement?” (p. 5).

e. Insufficient Scientific Evidence/ Insufficient Peer Review

The Kentucky Energy and Environment Cabinet asks many questions regarding statements made in the Guidance and the sources of the supporting scientific evidence. In general, the comments and questions in this letter suggest that insufficient scientific evidence has been referenced in the Guidance to support claims of adverse environmental impacts from surface coal mining in Kentucky.

The comment letter questions the scientific data referenced in the Guidance regarding impaired stream life downstream from surface mining, citing discrepancies between the scientific data utilized in the Guidance, and that used for a different draft EPA document. The commenter writes: “EPA’s assertion appears to be refuted in U.S. EPA’s draft document ‘The effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystem of the Central Appalachian Coalfields’ on page 55 ‘there is little evidence in the peer-reviewed literature of cumulative impacts of mining on downstream ecology. Fulk et al. (2003) found no evidence of additive effects of multiple mines on the fish. In another MTM-VF [Mountaintop Mining-Valley Fill] study, Pond, et al. (2008) reported no evidence of a significant relationship between the number of valley fills and macro invertebrate indices” (p. 4).

The letter also requests clarification of the noted discrepancy and documentation of scientific data specific to Kentucky to support comments made in the Guidance. In addition, the commenter requests identification of scientific data and reports to support comments made in the Guidance by asking the following questions:

- “5. Please identify the recent scientific reports ... and the list of other pollutants and pollutant parameters demonstrated by these recent scientific reports in Kentucky to cause or contribute to significant water quality impacts below surface mining operations other than conductivity and total dissolved solids” (p. 5); and
- “7. At the bottom of Page 11, the Q & A indicates that ‘to date, there is no evidence that the streams that have been restored have returned to their normal ecological functions after the mining is completed,’ what documentation with respect to Kentucky did U.S. EPA rely upon in making this statement?” (p. 6).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

4. INDUSTRY

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below:

- Gorman Company, LLC (Doc. #0013.1);
- Kentucky Union Company (Doc. #0014.1);
- Black Gold Sales, Inc. (Doc. #0016.1);
- Hazard Coal Corporation (Doc. #0017.1); and
- Kycoga Company, LLC (Doc. #0018.1).

In general, the comments do not support the Guidance, and discuss the validity and adequacy of material referenced in the Guidance, the suitability of eco-region use, and scientific review.

a. Scientific Validity of Material Referenced in Guidance

Frost Brown Todd disagree that the Guidance is based on valid scientific evidence and express concern that the standards set by the Guidance will change once they have been subjected to peer review and “scientific scrutiny.”

They recommend that EPA “engage in rigorous, scientifically valid, and peer reviewed analysis of relevant and available scientific data before attempting to impose any additional specific requirements on permits for coal mining activities” (p. 1). They contend that it is not sound science to set new standards based on scientific studies that have not been thoroughly peer reviewed and state that “It is unclear why EPA believes that it constitutes (...) sound science to

begin implementing a strict numeric limit when the science behind that limit has not even been ‘truthed’ out” (p. 9).

Frost Brown Todd suggest that the conductivity standard in the Guidance is based on limited scientific data, “Despite numerous statements in EPA’s documents about ‘extensive’ data supporting its analysis, EPA’s conclusions about the effects of surface coal mining on conductivity and the effects of conductivity on aquatic ecosystems in the region appear to be based largely on a single study – the so-called Pond-Passmore study – conducted in 2008” (p. 9).

Frost Brown Todd also argue that any changes may greatly impact projects permitted under the current Guidance: “... these detailed stringent requirements ... are based on scientific data and conclusions that have not been subjected to peer review or scientific scrutiny. This clearly is a case of putting the policy ‘cart’ before the scientific ‘horse” (p. 4).

c. Suitability of Ecoregion Use in Guidance

Frost Brown Todd question the applicability of the Guidance solely to Central Appalachia and argue that the suitability of ecoregion use in the Guidance is not science-based but rather a way to specifically target the coal mining industry in Appalachia through the use of policy. They question why the guidance is not applicable to other regions of the country with mining activities: “EPA has not articulated any reasonable or clear basis for the scope of these new rules – whether based on geography or industry” (p. 7). In addition they state: “It is also unclear why EPA has sought to limit the applicability of this conductivity limit to ‘Central Appalachian streams containing the types of soil found in those streams.’ Why is this information not relevant to other streams, regions, or industries? EPA’s conductivity benchmark in fact appears to be an artificial limited and manipulated standard designed to target a specific industry in a specific region, with the sole purpose of making the continued practice of that industry a practical impossibility” (p. 9).

d. Scientific Review and Technical Recommendations for Project Review and Monitoring

Frost Brown Todd recommend that the Guidance not be implemented immediately on permits for coal mining activity. They contend that prior to implementation of the Guidance on permit and project review the scientific data referenced should be subjected to scientific peer review: “EPA also should engage in a rigorous, scientifically valid, and peer reviewed analysis of relevant and available scientific data before attempting to impose any additional specific requirements on permits for coal mining activities” (p. 2).

Frost Brown Todd convey their opinion that once the scientific data has been reviewed the Guidance may change. which will negatively impact projects that are permitted under the current Guidance, as they are subject to different requirements: “Those permits are likely to be based upon requirements in the ‘interim’ Guidance that may prove unnecessarily stringent, scientifically invalid, or otherwise legally unnecessary” (p. 4).

e. Insufficient Scientific Evidence and Insufficient Peer Review

Overall, the comment letter by Frost Brown Todd states their opinion that the Guidance is based on insufficient scientific evidence that has not been adequately peer reviewed or proven. They express their concern that the Guidance will have a detrimental impact on the coal mining industry in Appalachia and that insufficient scientific data and evidence have been referenced to support its requirements: “This hardly appears to be the kind of extensive data that EPA purports to rely upon, nor does it appear to be the kind of extensive data on which such a far- reaching and potential devastating limit should be based. Yet this is what EPA has done” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One letter (Doc. #0015) received from congressional delegates comments on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. This letter is signed by 23 Congressional Delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming. In general the comment letter is not supportive of the Guidance, and is critical of the peer review process used by EPA for reviewing the scientific data prior to issuance of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

The congressional delegates express their opinion that the scientific data referenced in the Guidance should be subject to outside peer review prior to implementation: “We believe these proposals should be subject to public comment, as well as outside peer review for any draft scientific data, prior to implementation, so as to strike a better balance between environmental protections and responsible governance” (p. 1).

9. PRIVATE CITIZEN – GENERAL

Of the 84 comment letters posted by the docket as of December 1, 2010 by members of the general public, 30 letters commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. All letters but one (Doc. #0249) generally approve of the Guidance and its supporting materials.

a. Scientific Validity of Material Referenced in Guidance

A majority of the commenters support the scientific validity of materials referenced by the Guidance. Multiple comment letters state that "... there is unequivocal evidence from numerous studies both within the EPA and by independent scientists documenting that conductivity is elevated in waterways downstream from mountaintop removal mines in central Appalachia." It should be noted that this language is also found in the mass mailing campaign sponsored by Sierra Club (Doc. #0103).

Other commenters express support for the scientific material referenced in the Guidance with the following common statement: "The most recent, peer – reviewed scientific information documents the harm that mountaintop removal causes to water quality. Based on research showing a strong relationship between conductivity of at least 300 – 500 $\mu\text{S}/\text{cm}$ and harm to aquatic life, the policy will help ensure clean water." It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022).

b. Scientific Materials Not Reviewed/ Referenced by Guidance

Several commenter letters included the following common statement referencing a supplemental 2010 scientific article by Margaret Palmer that supports scientific materials referenced by the Guidance, "A recent peer-reviewed scientific article details the harm that mountaintop removal causes to water quality (Doc. #0180)." A reference to this scientific article is also mentioned by another commenter (Doc. #0222.1) quoting from the article the following statement regarding science and regulation: "The best available science clearly demonstrates that the impacts of mountaintop removal are 'pervasive and irreversible' and that 'current attempts to regulate mountaintop removal practices are inadequate'" (p. 1).

e. Insufficient Scientific Evidence/ Insufficient Peer Review

Many of the commenters in support of the Guidance and the referenced scientific reports share the common opinion that the mining practice of valley fills should not be allowed. Some commenters suggest that additional research should be funded by EPA for the study of the impacts of valley fills. One commenter writes (Doc. #0186): "The EPA must fund comprehensive research aimed at increasing your understanding of the impacts of valley fills"(p. 2).

Multiple letters identify their objections to mitigation through stream creation and provide the following statement related to insufficient scientific evidence: "EPA should strengthen the policy by refusing to permit mitigation (...) it is not possible to re-create the ecological functions of

streams. Similarly, EPA must not allow for the sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation downstream (Doc. #0189).”

In general, most comment letters support the scientific reports referenced by the Guidance. However, in addition to the referenced scientific evidence they suggest that funding for additional research will further develop an understanding of the adverse impacts of valley fills.

The commenter that opposes the Guidance (Doc. #0249) is of the opinion that there is insufficient scientific evidence to prove that mountaintop mining and the practice of valley fills affect the ecological services provided by streams: “Lobbyists will tell you that scientific research suggests that one valley fill is too many, because of the unique headwater streams lost along with the ecological serviced they provide this is not supported by facts.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. These campaigns are supportive of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

The comments in the letters from both the Earthjustice and Sierra Club campaigns support the scientific validity of material referenced in the Guidance. The Earth Justice campaign (Doc. #0022) states: “I support this Guidance because there is unequivocal evidence from numerous

studies both within the EPA and by Independent scientists documenting that conductivity is elevated in the waterways downstream from mountaintop removal mines in central Appalachia.” The comment letter goes on to state: “The best available science shows strong relationships between conductivity of at least 300 – 500 µS/cm, and harm to aquatic life in the affected streams.”

The Sierra Club campaign (Doc. #0103) argues that “The most recent, peer reviewed scientific information documents the harm that mountaintop removal causes to water quality.” Comments in the letter include the support of scientific research documenting the relationship between higher levels of conductivity and water quality referenced in the Guidance.

e. Insufficient Scientific Evidence/ Insufficient Peer Review

The Sierra Club letter (Doc. #0103) expresses opposition to the Guidance allowing for the sequencing of valley fills due to insufficient scientific evidence. They convey their opinion that “EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters.”

13. UNKNOWN

Ten letters posted by the docket as of December 1, 2010 from unknown sources commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. Of the ten comment letters, all but one letter (Doc. #0010) are in support of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

Several of the comment letters identify scientific research referenced in the Guidance demonstrating the loss of 2,000 miles of streams and headwaters due to mountaintop removal and express their appreciation that EPA is supporting this scientific research: “I am also pleased that EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia (Doc. #0192).”

One comment (Doc. #0010) opposes the science referenced, including the research from the Pond study by stating that the “Guidance is based on scientific studies that are limited in scope and analysis.”

b. Scientific Validity of Material Referenced in Guidance

Several comment letters include the following statement referencing a supplemental 2010 Science article by Margaret Palmer that supports scientific materials referenced by the Guidance: “A recent peer-reviewed scientific article details the harm that mountaintop removal causes to water quality (Doc. #0187).”

e. Insufficient Scientific Evidence/ Insufficient Peer Review

Many of the commenters who support the Guidance and the referenced scientific reports share the common opinion that the practice of valley fills when mining should not be allowed. Some commenters suggest that additional research should be funded by EPA for the study of the impacts of valley fills. Multiple commenters state: “The EPA must fund comprehensive research aimed at increasing your understanding of the impacts of valley fills.” Many of these comment letters also include the following statement of opposition to the valley fill practice citing insufficient scientific evidence: “EPA must not allow for the sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation downstream waters (Doc. #0211).”

IV. Conductivity

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of conductivity includes those comments, recommendations, and opinions submitted by stakeholders regarding the suitability of specific conductance as a benchmark, the use of constituent ions instead of conductivity, and the use of pollutants other than conductivity or constituent ions as a benchmark for water quality.

There were a total of 35 tallied comments submitted to the docket as of December 1, 2010, discussing conductivity. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 4-1 on the next page presents the total comment letters that address conductivity issue by commenter category.

Most comments from private citizens and mass mailing campaigns are in general agreement with the Guidance and support the use of conductivity as a benchmark. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, arguing that specific conductance is not an adequate benchmark for water quality downstream of mountaintop mining activities, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. The Sierra Club argues that scientific research has demonstrated that mountaintop mining activities are responsible for downstream high levels of conductivity because these cannot be attributed to residential development or agriculture, and recommends a stricter conductivity benchmark. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which are related to water quality measures and benchmarks.

Below are summaries, presented by commenter category, on the issue of conductivity as it relates to the Guidance. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

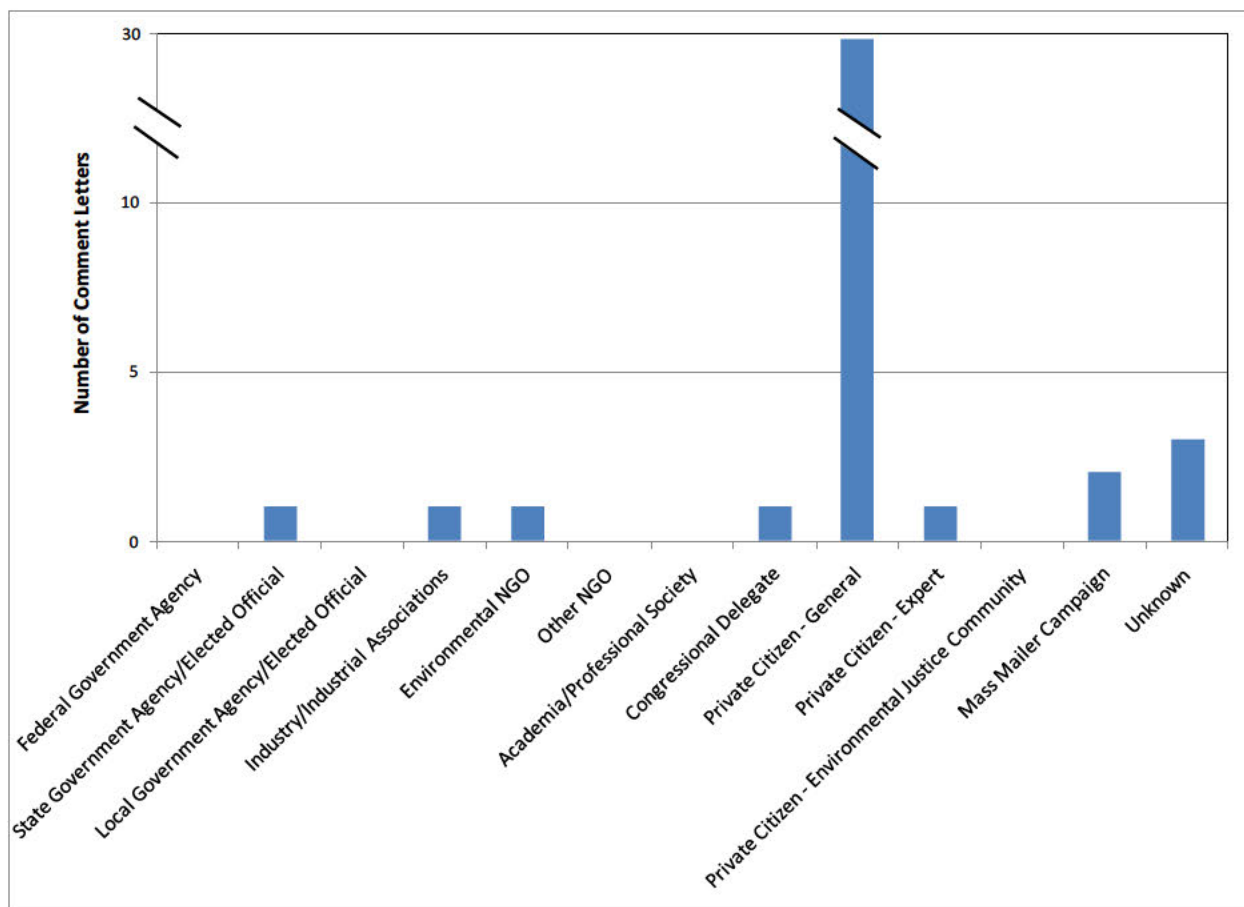


Figure 4-1. Conductivity, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations. Some of their questions relate to the Guidance's proposed water quality benchmarks.

b. Use of Constituent Ions Instead of Conductivity

The Kentucky Energy and Environment Cabinet refers to footnote 21 in the Guidance and a study "that narrows the applicability of this guidance to waters dominated by salts of SO_4^{2-} and

HCO₃⁻ at circum-neutral pH and low levels of chloride (q. A.16)” to request that EPA describe how this determination will be made when processing CWA Section 402 permits. They further ask “what delegated states should do when waters are not so dominated (q. A.16).”

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance, and to conductivity measures that they feel cannot be upheld.

a. Suitability of Specific Conductance as a Benchmark

With respect to conductivity, Frost Brown Todd states that the Guidance “includes the impositions of strict conductivity limits that may not be attainable” (p. 3).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted by an environmental NGO commenting on the issue of conductivity in EPA’s Guidance. The Sierra Club (Doc. #0225) strongly supports the Guidance, commends EPA for issuing it, and supports the suitability of conductivity as a benchmark for water quality.

a. Suitability of Specific Conductance as a Benchmark

The Sierra Club argues that ample scientific research has demonstrated that high levels of conductance are seen downstream of mountaintop removal mines in Appalachia. They also argue that EPA’s research has shown that other sources, such as soil disturbances from residential development and agriculture are not responsible for high conductance levels. They therefore make the point that the use of specific conductance is a suitable benchmark for determining water quality.

They are requesting the implementation of a higher conductivity benchmark in the Guidance “to prevent damage to headwater streams as well as the larger, downstream aquatic system” (p. 2). Furthermore, they reference the peer review conducted by the Science Advisory Board that confirms the validity of the conductivity study and the numeric benchmark and argue that the “levels that EPA identified for the benchmark may not be sufficiently protective of water quality” (p. 2).

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter received from congressional delegates (Doc. #0011) addresses conductivity. The letter is signed by three Congressional Delegates representing the States of Virginia and West Virginia. It is in general disagreement with the Guidance and the use of conductivity as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

The congressional delegates argue that the Guidance is “premature largely” and contend that full consideration has not been given to the “far-reaching implications of the policies it espouses, especially as it relates to conductivity” (p. 1).

9. PRIVATE CITIZEN - GENERAL

Twenty four comment letters, typically one page in length, received from members of the general public comment on conductivity. All letters are in agreement with the Guidance and the suitability of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

Commenters argue that specific conductance is suitable as a benchmark, with all letters except one (Doc. #0006) stating at least one of the following three reasons:

- “Because conductivity is elevated downstream from mountaintop removal mines;”

- “Best available science has shown that stream conductivity level is a reliable indicator of stream health and function;” or
- “Based on the research showing a strong relationship between conductivity of at least 300 – 500 $\mu\text{S}/\text{cm}$ and harm to aquatic life.”

About half of all the commenters encouraged EPA to “promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion.” It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022)

One commenter (Doc. #0006) applauds and supports the new conductance tests for streams and “supports the limits of conductance, on dissolved solids and small particulates” (p. 1).

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter submitted by a private citizen - expert comments on conductivity. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science (Doc. #0112). The commenter strongly supports the Guidance and of the use of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

This commenter is in support of specific conductance suitability as a benchmark and further states that “available science shows that stream’s conductivity level is a reliable indicator of stream health and function” and that “best available science shows a strong relationship between conductivity of at least 300 – 500 $\mu\text{S}/\text{cm}$ and harm to aquatic life.”

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA's Guidance, and of the use of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

Both Earthjustice and the Sierra Club support the suitability of specific conductance as a benchmark. They argue that research has shown a strong correlation between conductivity levels exceeding 300 – 500 $\mu\text{S}/\text{cm}$ and “harm to aquatic life.” The Sierra Club (Doc. #0103) further recommends that EPA “follow up the policy by setting water quality criteria for conductivity for central Appalachia and requires states to adopt these criteria as soon as possible.”

13. UNKNOWN

Three comment letters received from unknown or unidentified commenters discuss conductivity. They are all in support of the guidance.

a. Suitability of Specific Conductance as a Benchmark

Similar to the mass mailing campaign sponsored by Earthjustice, two comment letters (Doc. #0184 and #0214) support the suitability of specific conductance as a benchmark because “conductivity is elevated downstream from mountaintop removal mines.”

Similar to the other mass mailing campaign sponsored by The Sierra Club, two comment letters (Doc. #0185 and #0214) encourage EPA to set a “National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion.”

V. NPDES Oversight and Review

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of NPDES oversight and review includes those comments, recommendations, and opinions submitted by stakeholders regarding the following sub-issues:

- a. Federal authority to regulate these activities under 402;
- b. Application of reasonable potential analysis;
- c. Incorporation of numeric standards in NPDES permit;
- d. Monitoring and reporting requirements;
- e. Compliance schedules;
- f. Narrative standards;
- g. Antidegradation; and
- h. Recommended changes in guidance relating to CWA 402.

There were a total of 34 tallied comments submitted to the docket as of December 1, 2010, discussing NPDES oversight and review. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 5-1 on the next page presents the total comment letters that address the issue of NPDES oversight and review, by commenter category.

All comments received from private citizens and the mass mailing campaigns either support the Guidance or are opposed to mountaintop mining activities in general, and recommend that water quality criteria for conductivity be set and adopted throughout Appalachia. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters view the Guidance as flawed in imposing new requirements on NPDES permits solely for mountaintop mining activities, and request that the Guidance be withdrawn. Congressional delegates disagree that EPA's emphasis on conductivity for NPDES permits

related to mountaintop activities. The Sierra Club urges EPA to set water quality criteria for conductivity throughout Appalachia and to encourage states to implement them. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, including data collection, water quality standards, baseline monitoring, and compliance schedules.

Below are summaries, presented by commenter category, on the issue of NPDES oversight and review. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

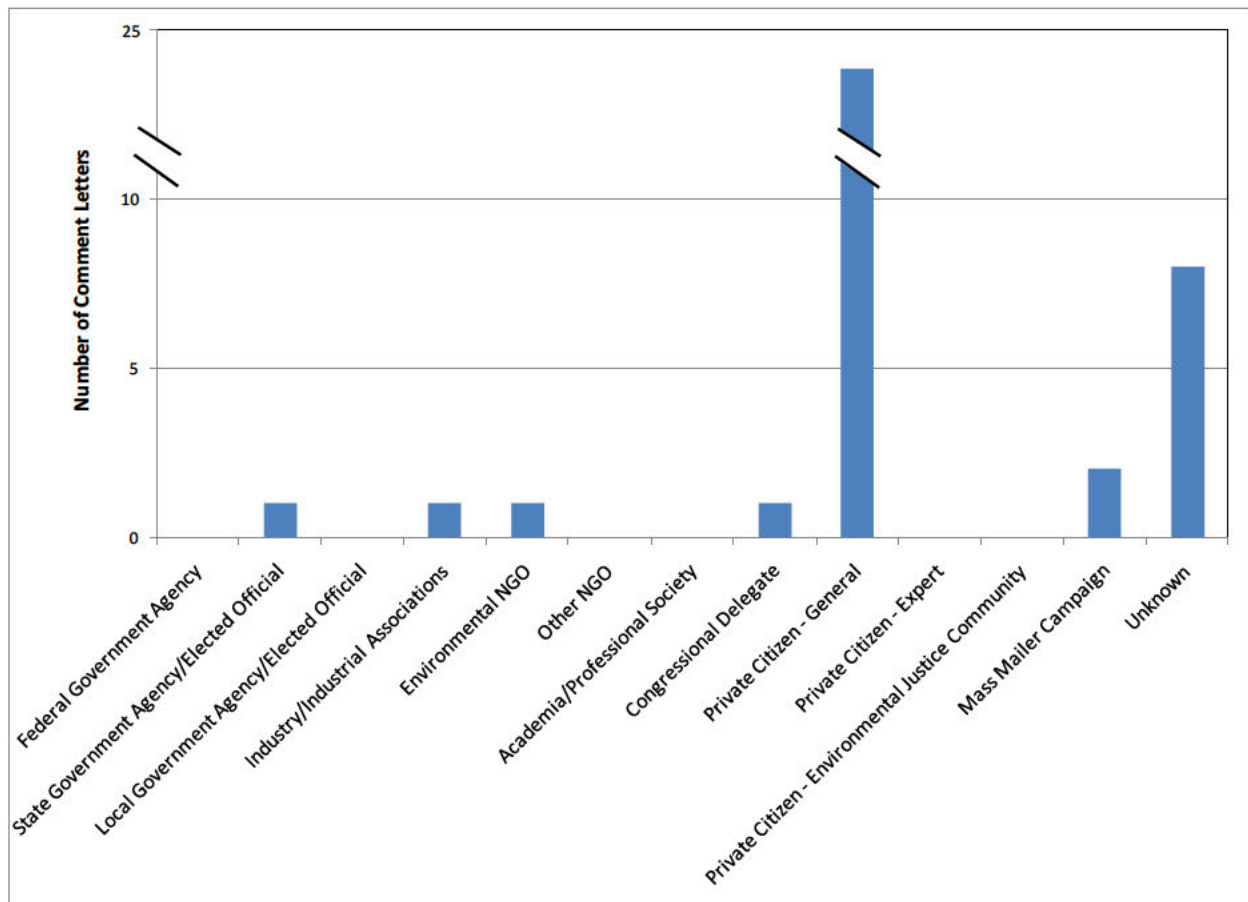


Figure 5-1. NPDES Oversight and Review, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

b. Application of Reasonable Potential Analysis

The Kentucky Energy and Environment Cabinet requests clarification regarding the issue of a permit conditional on the collection of data during the permit term, and the status of States not listed in the Guidance. Their questions are as follows:

- “Is it U.S. EPA’s determination that the issuance of a CWA § 402 permit may not be conditioned on collection of data during the permit term appropriate for performance of a reasonable potential analysis, with the requirement in the permit that it be re-opened or conditioned to include appropriate requirements once reasonable potential is determined?” (p. 4); and
- “Will States other than those specified in the Guidance also be “subject to reasonable potential analysis of non-coal mining activities?” (p. 5).

c. Incorporation of Numeric Standards in NPDES Permit

The Kentucky Energy and Environment Cabinet questions the relevance of numeric standards, and asks if other water quality standards (including narrative standards) could be used. Question 15 (p. 2) asks: “Is it U.S. EPA's determination that a delegated state cannot in some or all cases use the available approaches outlined in 40 CFR 122.44 for implementing a narrative water quality standard, including whole effluent testing (WET) or best management practices (BMPs) in lieu of a numeric limit for a narrative water quality standard?”

d. Monitoring and Reporting Requirements

The Guidance requires baseline monitoring data for biological condition, conductivity, total dissolved solids, sulfates, bicarbonate, chloride, magnesium, potassium, calcium, sodium, pH, and selenium. The commenter wonders if EPA is concerned with other parameters or if the concern is limited specifically to this list. The comment letter also asks (question 25, p.5): “What is U.S. EPA’s position as it relates to the use of water quality variances with respect to this new final interim guidance?”

e. Compliance Standards

The Kentucky Energy and Environment Cabinet questions EPA’s position on compliance schedules in the new Guidance.

f. Narrative Standards

The Guidance states that a top priority of the Administration is to reduce and minimize impacts of surface coal mining. The Kentucky Energy and Environment Cabinet requests an explanation of EPA's "perspective of reducing and minimizing impacts of surface coal mining as it relates to the goals and objectives of the CWA § 402 program (p. 4)." As stated above (under c. Incorporation of Numeric Standards in NPDES Permit), the Kentucky Energy and Environment Cabinet references 40 CFR 122.44 to recommend the use of narrative standards (question 15 p. 2).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

a. Federal Authority to Regulate These Activities Under 402

Frost Brown Todd claim the Guidance is a legally binding rule that has been adopted without public notice and comment, making it legally flawed, and request it be withdrawn immediately. They state "EPA has made clear its intent to impose specific new requirements on NPDES permits (and other related environmental permits) associated with surface mining activities in Appalachia, and to use its full authority and influence to compel the states and other federal agencies to enforce these requirements" (p. 3).

Frost Brown Todd is of the opinion that the permit requirements and environmental standards have not been subject to a full scientific review and feel the Guidance was issued prematurely. For example, the Guidance does not allow coal mining activities to be authorized under the NPDES general permit. Frost Brown Todd argues that EPA has not provided enough information to justify this requirement. They further claim EPA "improperly seeks to 'correct'

NPDES permits that have already been issued by states by seeking to force the Corps to address those alleged deficiencies through the Section 404 permitting program” (p. 5).

c. Incorporation of Numeric Standards in NPDES Permit

The Guidance sets a specific, numeric standard for states to enforce through the NPDES permitting process and requires specific documentation to support NPDES permitting decisions. Frost Brown Todd again make the argument that the Guidance is legally flawed and request it be withdrawn.

f. Narrative Standards

Frost Brown Todd disagrees with the Guidance’s position on narrative standards and contend that “the Guidance effectively precludes the use of whole effluent testing (“WET”) and/or best management practices, as allowed under 40 CFR § 122.44, to implement narrative water quality standards. Through this approach, EPA has effectively written these methods out of the regulation without notice and comment or appropriate regulatory action” (p. 5).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of NPDES oversight and review. The Sierra Club (Doc. #0225) strongly supports the Guidance and commends EPA for issuing it.

c. Incorporation of Numeric Standards in NPDES Permit

The Sierra Club feels the Guidance is necessary to protect water quality from negative impacts of mountaintop removal mining. They further urge EPA to “set water quality criteria for conductivity for central Appalachia and require states to adopt these criteria as soon as possible (p. 1).” Given the number of pending mining permits, they agree with EPA’s immediate implementation of the Guidance.

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter (Doc. #0011) posted by the docket as of December 1, 2010 was submitted by congressional delegates. It is signed by three members of Congress representing the States of Virginia and West Virginia, and is in general disagreement with the Guidance and federal authority to regulate mountaintop mining activities under 402.

a. Federal Authority to Regulate These Activities Under 402

The members of Congress are in general disagreement with the Guidance and are of the opinion that “EPA is seeking to bootstrap conductivity as a section 402 effluent limitation standard through the section 404 process” (p. 1) for surface coal mining in Appalachia. They argue there is no precedent to justify this action and it is a “wrong approach to implementing the Clean Water Act. This is a national law and should be applied evenly and equally throughout the country as has been done in the past, and there is simply no justification for departing from that practice” (p. 1).

9. PRIVATE CITIZEN - GENERAL

Twenty three comment letters, typically one page in length, submitted by members of the general public comment on the issue of NPDES oversight and review. All of the private citizen commenters either support the Guidance or are opposed to mountaintop mining in general.

a. Federal Authority to Regulate These Activities Under 402

Commenters support EPA’s decision to implement the Guidance immediately. One commenter (Doc. # 0222.1) states: “I also strongly encourage the EPA to promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion” (p. 2).

c. Incorporation of Numeric Standards in NPDES Permit

Most commenters express concern with the impacts of mining to water quality. Many feel EPA should set water quality criteria for conductivity for Central Appalachia and require these standards be adopted by states as soon as possible.

h. Recommended Changes in Guidance Relating to CWA 402

As stated above, the majority of commenters are concerned with the impacts of mining to water quality. Many feel EPA should set water quality criteria for conductivity for Central Appalachia and require these standards be adopted by states as soon as possible. Several commenters further suggest that EPA “prohibit issuance of permits that are contrary to the guidance (Doc. #0215).”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted from a private citizen - expert commenting on the issue of NPDES oversight and review. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science (Doc. #0112).

c. Incorporation of Numeric Standards in NPDES Permit

The commenter shares concern for water quality with commenters from several other commenter categories and reiterates the request for EPA to “follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia” (p. 2).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized.

c. Incorporation of Numeric Standards in NPDES Permit

Both campaigns share concern for water quality with commenters from several other commenter categories and reiterate the request for EPA to “follow up the policy by setting water quality criteria for conductivity for central Appalachia and require states to adopt these criteria as soon as possible (Doc. #0103).”

13. UNKNOWN

Eight comment letters received from unknown or unidentified commenters discuss NPDES oversight and review. All commenters are in general agreement with EPA’s Guidance.

c. Incorporation of Numeric Standards in NPDES Permit

The majority of commenters “strongly encourage EPA to promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion (Doc. #0214.1, p. 1).”

h. Recommended Changes in Guidance Relating to CWA 402

Many commenters appreciate EPA’s commitment to protect Appalachia by enforcing the CWA and urge EPA to “strengthen and finalize your guidance to improve review of Appalachian surface coal mining (Doc. #0192).”

VI. Clean Water Act Section 404

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The CWA Section 404 issue area includes those comments, recommendations, and opinions submitted by stakeholders regarding the following sub-issues:

- a. Federal Roles of EPA, the United States Army Corps of Engineers (Corps), and the Office of Surface Mining Reclamation and Enforcement (OSM) in Evaluating CWA 404 Applications;
- b. Independent Evaluation of Water Quality under CWA 404;
- c. Mine Design;
- d. Relationship of Water Quality to Significant Degradation under 230.10(c);
- e. Compensatory Mitigation under CWA 404;
- f. Monitoring and Reporting Requirements;
- g. Cumulative Impact Analysis under CWA 404; and
- h. Recommended Changes in Guidance Relating to CWA 404.

A total of 69 comments posted by the docket as of December 1, 2010 discussed the CWA Section 404. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 6-1 on the next page presents the total comment letters that address the CWA Section 404 issue, by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and support EPA's implementation of the CWA requirements and identify EPA and the Corps as responsible for the prevention of water quality degradation. These comments are not supportive of valley fills, viewed as destructive, or of stream creation, qualified as insufficient mitigation for stream loss. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry

commenters contend that the Guidance oversteps established authorities and regulatory structures, is incorrectly reflective of the so-called Hobet 45 mine case outcomes which they view as not necessarily applicable to all surface coal mining operations, and imposes unrealistic and unpredictable monitoring requirements. Congressional delegates urge EPA to withdraw the Guidance because it represents substantial changes that exceed the intent of the CWA, and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club disagrees with the sequencing of valley fills and compensatory mitigation, particularly for headwater streams, and urges EPA to further strengthen the Guidance requirements and ensure its prompt implementation in Appalachia. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which relate to mitigation.

Below are summaries, presented by commenter category, on the issue of the CWA Section 404. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

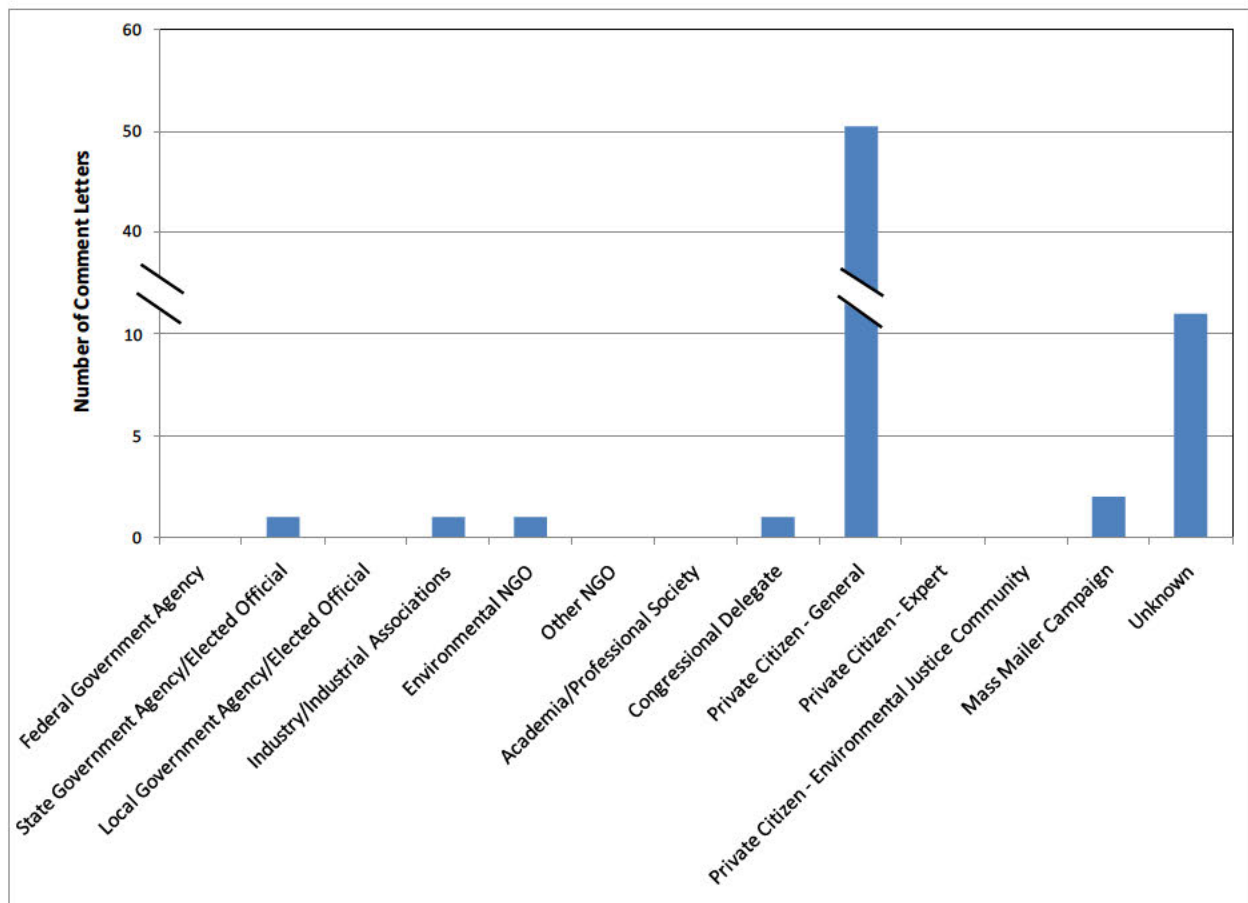


Figure 6-1. Clean Water Act Section 404, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the CWA Section 404 had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations, specifically on the roles of federal agencies in evaluating Section 404 applications.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

The Kentucky Energy and Environment Cabinet seeks confirmation of whether a Section 404 permit may be issued if a surface coal mining operation “complies with the suggested alternative mining practices in this guidance,” and whether “such alternative mining practices will sufficiently mitigate for a reasonable potential to violate for the parameters identified at the bottom of page 22 for a CWA § 402 permit” (p. 5). Seeking further clarification on the roles of federal agencies, Kentucky inquires as to whether the Corps may issue a CWA § 404 permit “in advance of issuance of a CWA § 402 permit” (p. 5).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, no comments from this category group discussing the issue area of Section 404 of the CWA had been posted by the docket. Any comments received subsequently will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. In general, the comments do not support the Guidance. Their CWA Section 404 comments focus

on the roles of government agencies, independent evaluations of water quality under CWA Section 404, sequencing of valley fills, and monitoring and reporting requirements.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

Frost Brown Todd imply that EPA is overstepping its legal and regulatory boundaries under the 404(b)(1) program: “EPA has clearly directed its regional offices to enforce these requirements, which are set forth in detail in the Guidance, through various means, including objecting to proposed NPDES permits; ignoring state water quality certifications under Section 401 of the CWA; and forcing state and federal agencies to ‘correct’ NPDES permit deficiencies through other permitting programs, such as the U.S. Army Corps of Engineers' ("Corps") program under CWA Section 404” (p. 3).

They further contend that the Guidance “ignores the careful federal-state balance established by Congress, and imposes numerous requirements on coal mining permitting that are not authorized under the Clean Water Act and related statutes” (p. 4). Frost Brown Todd finally conclude on this subject with the following statement. “These heavy-handed requirements not only contradict the long-established regulatory standards, authorities, and programs under the CWA, SMCRA, and related statutes – they threaten to establish precedents that would undermine the consistent and fair application of those statutes to activities and industries throughout the United States.”

b. Independent Evaluation of Water Quality under CWA 404

Frost Brown Todd also assert that the Guidance “effectively precludes the use of whole effluent testing ("WET") and/or best management practices, as allowed under 40 CFR § 122.44, to implement narrative water quality standards,” and that the EPA has effectively done so “without notice and comment or appropriate regulatory action” (p. 5).

c. Mine Design with Respect to Sequencing Valley Fills

Referencing the so-called Hobet 45 mine case, Frost Brown Todd argue that the Guidance is reflective of the outcome of that specific case, qualified as “one of the first permits to be addressed through the so-called Enhanced Coordination Procedures adopted by EPA and the Corps in mid-2009” (p. 3). They further imply that the outcome of the negotiations between the EPA, the Corps, and Hobet Mining, LLC, is not necessarily applicable to all surface coal mining operations.

“This includes the imposition of strict conductivity limits that may not be attainable, dramatic reductions in the percentage of coal to be recovered, requirements for mitigation monitoring and ‘adaptive management plans,’ and significant revisions to valley fill design. These measures were clearly the ‘price to be paid’ in order to eliminate EPA's objections to the permits required for the Hobet 45 mine, and EPA has made it patently clear in the April 1 Guidance Memorandum and all of its recent actions that it intends to make these measures mandatory for all future mine permits in Central Appalachia” (p. 3).

f. Monitoring and Reporting Requirements

Echoing the opinion expressed above, Frost Brown Todd further assert that the Guidance imposes unnecessary and costly monitoring requirements for permittees.

“to include provisions for ‘adaptive remedial action’ [that] threatens to require every permittee to write an open-ended blank check for further, unlimited mitigation demands by EPA and other resource agencies – without any clear standards or expectations in advance. This threatens to force permittees to attempt to hit constantly moving targets for mitigation and to impose economically impracticable and technically unachievable mitigation requirements on them in perpetuity” (p. 8)

They argue that these monitoring requirements are “arbitrary and capricious and well beyond EPA’s statutory authority,” and contend that “EPA and other permitting agencies must provide clear, predictable, and attainable standards in advance” (p. 8).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of the CWA Section 404. Overall, the Sierra Club (Doc. #0225) is supportive of the Guidance, yet encourages the implementation of additional measures to protect the environment from the “environmentally destructive activities taking place” in Appalachia (p. 1). Sierra Club comments upon the sequencing of valley fills and the ability of mitigation measures imposed under Section 404 to mitigate for water quality impacts, and provides recommendations for changes to the Guidance relating to Section 404 of the CWA.

c. Mine Design with Respect to Sequencing Valley Fills

While generally supportive of the Guidance, Sierra Club disagrees “with the policy of sequencing approval of valley fills” (p. 2). Citing that valley fills “cause irreparable damage to streams,” the commenter notes that “high conductivity levels cause the loss of streams’ ecological services” (p. 2) as demonstrated by the scientific information on which EPA’s Guidance is based. The commenter goes on to remind the EPA and the Corps of their “responsibility to prevent water pollution, not simply monitor it after it occurs” (p. 2).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

The Sierra Club disagrees with compensatory mitigation by asserting that “Mitigating for the loss of headwater streams should not be permitted because it is not possible to re-create the ecological functions of these streams.” The Sierra Club also wishes for EPA to “recognize that mitigation for these streams is not a viable option” (p. 2).

h. Recommended Changes in Guidance Relating to CWA 404

Sierra Club commends EPA for issuing the Guidance, but urges EPA to further strengthen its requirements with respect to Guidance implementation under the CWA Section 404. “While Sierra Club supports the guidance as an important initial step, we believe that EPA must strengthen it in several aspects” (p. 2). Sierra Club concludes with the statements, “We urge EPA to ensure that the guidance is faithfully carried out in its regional offices and in the Appalachian states. In addition, we ask EPA to strengthen the guidance by recognizing the failure of stream mitigation effort and to abandon its policy of sequencing valley fills” (p. 2).

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOS)

As of December 1, 2010, no comments from this category group discussing the issue area of Section 404 of the CWA had been posted by the docket. Any comments received subsequently will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the CWA Section 404 had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter (Doc. #0011) submitted by congressional delegates discusses Section 404 of the CWA. The letter is signed by three members of Congress representing the States of Virginia and West Virginia, is in general disagreement with the Guidance, and expresses concerns on many of its aspects.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

The congressional delegates focus their comments on the Guidance around the “far-reaching implications of the policies it espouses” (p. 1). Specific to the roles of federal agencies in evaluating CWA 404 applications, they assert that “Essentially, EPA is seeking to bootstrap conductivity as a section 402 effluent limitation standard through the section 404 process ... [and] only in Appalachia, and only with respect to surface coal mining operations” (p. 1). The commenters contend that “not only is there no precedent for such an action, but [that] it is also patently a wrong approach to implementing the Clean Water Act.”

The congressional delegates conclude by urging EPA to withdraw the Guidance and to “continue to work with the affected States, the involved federal agencies, and all stakeholders to develop guidelines that truly provide a balanced process for energy development and environmental protection” (p. 2).

9. PRIVATE CITIZEN – GENERAL

Fifty-one comment letters posted by the docket as of December 1, 2010, from members of the general public commented on the issue area of the CWA Section 404. Several identical comments are expressed by many of the commenters, and many of these comment letters appear to be modified versions of the mass mailing campaigns (e.g., Doc. #0022 from Earthjustice, and Doc. # 0103 from Sierra Club).

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

Many of the private citizen letters comment upon the roles of federal agencies in evaluating CWA 404 applications, with most expressing gratitude that the Guidance will strengthen this process and “ensure that regional staff will finally following Clean Water Act Requirements calling for an end to one of the devastating impacts of mountaintop removal coal mining” (e.g., Doc. # 0179). Others are thankful that “EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia” (e.g., Doc. # 0180), and that “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued” (e.g., Doc. # 0222.1)

One commenter (Doc. #0053) summarizes the general sentiment by writing: “I urge the EPA to apply the Clean Water Act to permit applications for mountain top removal mines. I understand that this type of mining has continued despite its violation of law due to carious waivers and loopholes based on false information. I urge the EPA to base their decisions in fact and enforce laws passed to protect air and water quality”.

c. Mine Design and Sequencing of Valley Fills

More than half of the private citizen commenters express concern over the practice of sequencing valley fills, imploring that “EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills” (e.g., Doc. # 0032).

One Tennessee resident (Doc. #0074, p. 1) expresses the strong opinion that: “there is no mitigation value or other benefit to any policy of ‘sequencing’ valley fills. Such a policy would only lengthen the period of time over which the same absolute ecological genocide occurs. There is, to date, no actual restoration of Appalachian forest following the removal of its topsoil yet demonstrated, let alone practiced by mining companies. Without such restoration, ‘sequencing’ would only delay the inevitable destruction. Environmental laws are meant to prevent ecological destruction, not merely delay it.”

c. Mine Design and Material Handling and Upland Disposal

Among the commenters who discuss the material handling and upland disposal of sediments, most focus upon valley fills, and express skepticism of the practice. For instance, one commenter writes: “Scientific research suggests that one valley fill is too many, because the

unique headwater streams filled are lost forever, along with all of the ecological services they provide to the ecosystem. On top of that, every valley fill becomes a source of pollution that contaminates the watershed downstream” (Doc. #0222.1, p. 3).

Another commenter states that “Scientific research suggests that one valley fill is too many, because the unique headwater streams filled are lost forever, along with all of the ecological services they provide. On top of that, every valley fill becomes a source of pollution that contaminates the watershed downstream” (Doc. #0245).

d. Relationship of Water Quality to Significant Degradation under 230.10(c)

Several comments (sometimes with identical sections) express that “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued” and that “After-the-fact monitoring is not a legal or effective substitute for preventing significant harm and loss of waters in the first place” (e.g., Doc. #0222.1, p. 3).

A Tennessee resident expresses a slightly different, and more strongly worded opinion (Doc. #0074): “This outrage will stop when EPA enforces the Clean Water Act and other environmental laws as they were intended. ‘Undue degradation’ of waterways necessarily includes their complete obliteration, and the latter is therefore illegal. The Corps of Engineers’ determination in 2002 that the complete burial of streams could constitute ‘fill,’ permissible under the CWA, was driven by political directives from the former administration, not science or a plain reading of the law. The EPA must not further indulge this violence to environmental law and the resulting violence to the Appalachians.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

More than half of the private citizen letters discuss the suitability of stream creation as compensatory mitigation under Section 404, with many expressing the identical comment that “there is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams” (e.g., Doc. #0032).

Several commenters also make the identical statement that: “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams. Similarly, EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. #0088).

One commenter furthers the general opinion expressed by many by stating: “The proposed guidance policy is only a first step toward compliance with the Clean Water Act. In particular, there is no scientific evidence that ‘stream creation’ is a sufficient means of mitigation, as no replication of an intact, functioning Appalachian forest stream has ever been attained” (Doc. #0074, p. 1).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

Only a small handful of commenters from the private citizen – general category reference the ability of proposed mitigation under CWA 404 to compensate for water quality impacts, primarily referring indirectly to this sub-issue by referencing the ecological functions of streams. They state that “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams” (Doc. #s 0217, 0218, and 0219). Another commenter (Doc. #0254) points out that “stream creation does not mitigate for stream loss, especially for headwater streams.”

f. Monitoring and Reporting Requirements

The docket contains several letters from private citizens commenting on the monitoring and reporting requirements, although only in passing. These commenters make the identical statement that “After-the-fact monitoring is not a legal or effective substitute for preventing significant harm and loss of waters in the first place” (e.g., Doc. #0222.1, p. 3).

g. Cumulative Impact Analysis under CWA 404

Several letters from private citizens address the concept of cumulative impacts under Section 404 of the CWA, commenting that “EPA also deserves credit for finally recognizing in the policy that the Clean Water Act does not permit the massive, cumulative impacts that result from mountaintop removal mining. Appalachia cannot afford to continue to bury its streams and pollute entire watersheds” (Doc. #s 0088, 0089, 0090, 0091, and 0222.1, p. 2).

h. Recommended Changes in Guidance Relating to CWA 404

Most private citizen comments provide recommendations to EPA that they feel will strengthen the environmental protections of the Guidance. A quote found repeatedly among this commenter category is as follows: “Finally, EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams. Similarly, EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. 0213.1).

The opinion expressed by many of the general private citizen letters is that “the proposed guidance policy is only a first step toward compliance with the Clean Water Act,” (Doc. # 0074), recommending that EPA strengthen its Guidance document by reconsidering several aspects of the Guidance. These aspects include the practice of sequencing valley fills and relying upon stream creation as suitable mitigation for impacts under CWA 404. One commenter (Doc. #0230) is particularly adamant regarding valley fills stating that “Valley fills should be completely banned anywhere in the USA forever!”

Several commenters (Doc. #s 0244, 0245, and 0253) cite that “More than 2,000 miles of streams have already been destroyed, and we cannot afford to lose more, especially unique and vital headwater streams. Because of this, I strongly urge the EPA to strengthen this guidance.”

One letter recommends the use of rule-making: “The EPA now must further increase protections for streams and communities. Please use rule-making to make stream protections permanent” (Doc. #0264), a recommendation echoed by other commenters.

Doc. #0088 calls for “a change to business as usual that places private profit above public resources by upholding the Clean Water Act in the mining practice in Appalachia and live up to the name The Environmental Protection Agency.” Another comment (Doc. #0075) simply states: “NO MORE MOUNTAIN REMOVAL MINING”.

A West Virginia commenter (Doc. #0251) implores: “Please don’t back down on the rules you have started to create; move forward with confidence and courage knowing that the vast majority of Americans are rooting for you to curb the out-of-control greed and rapacious practices of what we call BIG COAL.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted by a private citizen - expert commenting the CWA Section 404. The commenter is a biologist with a Masters degree in biology and more than 30 years in the Appalachian region public school system, and is currently teaching wildlife management and environmental earth science (Doc. #0112). The comment echoes most of the Earthjustice mass mailing campaign (Doc. #0022), with some personal insight to his experience living in this region. He comments upon the sequencing of valley fills and the suitability of stream creation to provide compensatory mitigation under Section 404 of the CWA, and provides recommended changes in the Guidance relating to CWA Section 404.

c. Mine Design and Sequencing of Valley Fills

As with others who are against the practice of sequencing valley fills, the commenter expresses that “EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The comment letter, inclusive of content from the Earthjustice mass mailing campaign repeats the statement that “There is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams.”

h. Recommended Changes in Guidance Relating to CWA 404

As with many other supporters of the Guidance, the commenter supports EPA in its efforts to finalize the Guidance with even further environmental protections. “After years of neglect by

EPA, Appalachia deserves better than another failed experiment that allows for the damage to start before the impact of the permit is appropriately assessed, in permits that put a local community in limbo while decisions about the future of their waters get made behind closed doors” (p. 2).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, no comments from this category group discussing the issue area of the CWA Section 404 had been posted by the docket. Any subsequent comments received from this commenter category will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and focus on the sequencing of valley fills, the suitability of stream creation, and the ability of mitigation to compensate for impacts to water quality. Both mass mailing letters advocate for strengthening the Guidance.

c. Mine Design and Sequencing Valley Fills

Despite overall agreement with the issuance of the Guidance, neither mass mailing campaign supports the practice of sequencing valley fills. “Additionally, EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills.” This sentiment is echoed by the Sierra Club mass mailing campaign.

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The Earthjustice campaign comments generally on the ability of stream creation to provide suitable mitigation under the CWA by stating, “There is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams.” The Sierra Club campaign furthers this reaction by stating that “...EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams.”

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

While not commenting directly on the ability of the mitigation practices to compensate for water quality impacts, the Earthjustice supporters urge EPA to carefully assess the impact of a permit before it is issued, stating “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued.”

h. Recommended Changes in Guidance Relating to CWA 404

The Earthjustice campaign concludes with a plea for EPA to further the environmental protections within the Guidance: “Finally, I strongly urge you, Administrator Jackson, to strengthen this guidance.” Sierra Club supporters echo this sentiment.

13. UNKNOWN

Eleven letters from unknown or anonymous sources comment on the CWA Section 404. All comments support the Guidance. These letters comment upon aspects of Section 404 of the CWA, the roles of federal agencies, sequencing of valley fills, the relationship of water quality to significant degradation, the suitability of stream creation as mitigation, the ability of mitigation to compensate for water quality impacts, and cumulative impacts. About half of these comment letters also provide recommended changes, mostly related to strengthening the Guidance.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

One commenter (Doc. #0216) expressed gratitude that “EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia. The streams in coal country must not be destroyed by mining impacts.”

c. Mine Design and Sequencing Valley Fills

Most letters from unknown sources disapprove of the practice of sequencing valley fills, “as there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. #0187) and that “scientific research suggests that one valley fill is one too many, because the unique headwater streams filled are lost forever, along with all of the ecological services they provide to the ecosystem” (e.g., Doc. # 0209).

d. Relationship of Water Quality to Significant Degradation under 230.10(c)

Two of the unidentified commenters (Doc. #s 0185 and 0214.1) reference the relationship of water quality to significant degradation, noting that “the EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The majority of the commenters from this category remark on the suitability of stream creation, by stating that “Science shows that current mitigation strategies are ineffective and that we can not replace buried streams. This needs to be recognized as part of permitting process” (Doc. #0183). Many expressed the identical sentiment that “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams” (e.g., Doc. #0210).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

A few commenters from this category make a passing reference to the ability of mitigation to compensate for water quality impacts, most of them expressing skepticism. One commenter advises EPA to “recognize that current mitigation strategies do not work” (Doc. #0183), while another “oppose[s] the use of permit mitigation for damage created by surface mining. Once the damage occurs it is irreparable. No amount of mitigation can off-set this type of injury to our land, water, and citizens” (Doc. #0226).

h. Recommended Changes in Guidance Relating to CWA 404

About half of the comment letters provide recommendations for changes to the Guidance relating to Section 404 of the CWA, with many encouraging EPA to strengthen the guidance “by refusing to permit mitigation as an option for the loss of streams” (Doc. #s 0187, 0209, and 0211). “EPA must further increase protections for our streams and our communities; too many streams have been lost, and no more valley fills should be permitted. While these initial steps are important, stream protections must be made more permanent via rule-making” (Doc. #s 0184 and 0214.1).

Multiple commenters also express appreciation for “EPA’s commitment to finally enforce the Clean Water Act to protect Appalachia,” and encourage EPA to “Finalize your guidance to improve review of Appalachian surface coal mining (Doc. #s 0209 and 0216).

VII. Clean Water Act Section 401

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Clean Water Act Section 401 issue includes comments and opinions submitted by stakeholders regarding recommended changes to the Guidance specifically relating to Section 401 of the CWA.

There were a total of three tallied comments submitted to and posted by the docket as of December 1, 2010, discussing Section 401 of the CWA. These comments were all submitted by private citizens, one of whom is a citizen of Appalachia. Commenters express gratitude for the issuance of the Guidance and urge further protection under the CWA, citing the destructive nature of mountaintop mining practices to date.

Below are summaries, presented by commenter category, of the comments received on Section 401 of the CWA.

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will

be addressed in the final summary.

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

9. PRIVATE CITIZEN – GENERAL

Three comment letters posted by the docket as of December 1, 2010, and submitted by members of the general public commented on Section 401 of the CWA either directly or by reference to water quality issues. Additional comments received subsequently will be addressed in the final summary. The comments generally support the issuance of the Guidance, and recommend further measures. For example, one commenter recommends that EPA “further increase protections for our streams and our communities. Stream protections must be more permanent via rule-making. I urge the EPA to assure that state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance (Doc. #0247).”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

13. UNKNOWN

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

VIII. National Environmental Policy Act

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The NEPA issue includes comments and opinions submitted by stakeholders regarding cumulative impact analyses under NEPA, the need to prepare Environmental Impact Statements (EISs), and any recommended changes to the Guidance specifically relating to NEPA.

Three tallied comments submitted to and posted by the docket as of December 1, 2010, discussed NEPA. These comments were submitted by the following commenter categories: industry representatives, the general public, and an anonymous commenter. The general private citizen and the anonymous commenter are generally supportive of the issuance of the Guidance and encourage EPA to further its environmental protections when reviewing mountaintop mining projects. Industry commenters focus their comments on the need for preparing an EIS, citing a lack of sufficient information to support EPA's conclusion that an EIS should be required categorically for certain mountaintop mining projects affecting more than one mile of jurisdictional streams. They recommend that the Guidance be immediately withdrawn.

Below are summaries, presented by commenter category, on the NEPA issue. Under each commenter category all sub-issues commented on are listed by letter (based on the issue outline) and discussed.

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding NEPA. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance, and disagree on the requirement to prepare an EIS under NEPA for specific types of mining activities.

b. Need to Prepare Environmental Impact Statements

Frost Brown Todd contend that “EPA has prematurely, and without sufficient specific information, concluded that an environmental impact statement (‘EIS’) will be required under the National Environmental Policy Act (‘NEPA’) for any proposed mining activity that will affect more than one mile of jurisdictional ‘streams’ (...) Again, EPA has provided no information to support a general conclusion that all such actions will have a ‘significant effect’ on the human environment” (p. 6).

The commenters further argue that “Moreover, EPA has not subjected that conclusion to notice and comment, as would be required for any general determination to require an EIS for a whole category of activities (as is the case here)” (p. 6).

While not specifically providing recommendations for changes in the guidance relating to NEPA, the commenters conclude with a request that EPA “immediately withdraw the April 1 Guidance in its entirety” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

9. PRIVATE CITIZEN – GENERAL

Only one comment letter from a private citizen had been posted by the docket as of December 1, 2010. This individual, while not specifically referencing the NEPA process, encourages the EPA to “write specific steps in the permitting process which address the collection and analysis of data about the public health impacts (Doc. # 0186, p. 1)” of mountaintop removal coal mining.

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

13. UNKNOWN

One letter (Doc. #0183) posted to the docket as of December 1, 2010, from unknown sources commented on NEPA. The commenter appears to be generally supportive of the Guidance, and encourages the EPA to “Enforce water quality requirements of CWA” and “incorporate WQBELs into permit requirements” again presumably referring to the information necessary for submittal within an EIS.

Christopher
Hunter/DC/USEPA/US

01/24/2011 11:41 AM

To Ross Geredien, Marcel Tchaou

cc

bcc

Subject Fw: Summary of SAB call today on ORD MTM reports

FYI

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/24/2011 11:40 AM -----

From: Matthew Klasen/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Denise Keehner/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA, Nancy Stoner/DC/USEPA/US@EPA, Peter Silva/DC/USEPA/US@EPA, Karyn Wendelowski/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Sharmin Syed/DC/USEPA/US@EPA, Tom Lavery/DC/USEPA/US@EPA, Marcus Zobrist/DC/USEPA/US@EPA, Brian Frazer/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Tanya Code/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Colleen Forestieri/DC/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA, John Pomponio/R3/USEPA/US@EPA, Jon Capacasa/R3/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA, Tinka Hyde/R5/USEPA/US@EPA, Ephraim King/DC/USEPA/US@EPA, Betsy Behl/DC/USEPA/US@EPA
Cc: Michael Slimak/DC/USEPA/US@EPA, Susan Cormier/CI/USEPA/US@EPA, Glenn Suter/CI/USEPA/US@EPA, Susan Norton/DC/USEPA/US@EPA, Joe Beaman/DC/USEPA/US@EPA, Lisa Huff/DC/USEPA/US@EPA, Joe Beaman/DC/USEPA/US@EPA, Rachael Novak/DC/USEPA/US@EPA
Date: 01/19/2011 06:08 PM
Subject: Summary of SAB call today on ORD MTM reports

Hi everyone,

Given the broad interest in the SAB's review of ORD's draft MTM reports, I thought I'd send around a summary of the discussion. (This represents my unofficial summary only.)

Background: Today's teleconference was a "quality review" by the full SAB of the SAB Panel's draft reports. Today's call, run by the Chair of the SAB, consisted of public comments, a summary of each report from the Panel, a set of oral comments provided by a set of SAB reviewers, and a vote by the SAB on how to proceed with each report.

Summary of Discussion: In general, the SAB was supportive of the content of the Panel's draft reports, and offered suggested improvements (largely to encourage the Panel to take a second look at specific issues or to clarify its recommendations). The Panel spent more time discussing the MTM/VF impacts report than the conductivity report, and the call finished well ahead of schedule. A more detailed summary of the issues that were discussed is attached.

NMA Comments: NMA provided public comments at the outset of the meeting, criticizing the SAB process for its "disappointing" draft reports and its inadequate consideration of NMA's public comments and scientific analyses.

Next Steps: At the conclusion of the discussion, the Board approved each report pending revisions by the Panel and a re-review by a subset of SAB members. So the full SAB will not meet again to consider these reports and will defer to a subset of the group for final approval. The SAB staff office expects final SAB reports to be sent to the Administrator within 30 days.

Attached is a more detailed summary of what was discussed.

Finally, in terms of responding to any press inquiries that come in regarding NMA's strong process comments on today's call, it's worth pointing out that while the SAB does not pull together a formal response to public comments, ORD is pulling together a response to all public comments as it works to revise both reports.

Let me know if you have any questions.

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-19 MTM SAB Quality Review Telecon Summary.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Tanya Code/DC/USEPA/US
01/24/2011 04:02 PM

To OWOW Managers Group
cc
bcc
Subject FYI: Talking Points from OW Staff Meetings: 1/21; 1/18; 1/14

Talking Points for OD Staff Meeting
January 21, 2011

Non-responsive

[REDACTED]

[REDACTED]

[REDACTED]

Non-responsive

[illegible]

[REDACTED]
 [REDACTED]
 [REDACTED]

Leeco-Stacy Mine

- [illegible]

NMA Litigation:

- (b) (5)

Non-responsive

- Non-responsive
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]
- [Redacted]

[Redacted]

- [Redacted]

- [Redacted]

- [Redacted]

- [Redacted]

- [Redacted]

- [Redacted]

- [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]

- [Redacted]

Talking Points for OD Staff Meeting
January 14, 2011

Surface Coal Mining

- The Spruce No. 1 Mine 404(c) Final Determination signed yesterday.
- (b) (5)

■

Non-
responsive

■

■

■

■

■

Tanya Code
Special Assistant
Office of Wetlands, Oceans and Watersheds
U.S. Environmental Protection Agency
Tel: 202.566.1063
Fax: 202.566.1147

Christopher
Hunter/DC/USEPA/US

01/25/2011 09:39 AM

To Marcel Tchaou

cc

bcc

Subject Overview factsheet collection for Program Ops Team

Hi Marcel,

aside from the comment summary for the April Guidance that you're working on, I'd like you to start working with the other Ops team staff on developing 2-pager factsheets for our hot topics that we can keep on the G drive for when we need information fast. I've drafted a basic template for the information I'd like you to gather, and a few examples to start with. Some people might already have factsheets that you can work with and update, but I would eventually like everyone to keep updated overviews in one place G:\Wetlands Division\WARRB\Program Ops Team\Briefing Papers and Factsheets

Here are the topics I can think of right now, and the staff person you can talk to about drafting the factsheets

EPA's Surface Coal Mining Efforts (Brian T)

Enhanced Coordination Procedures (Ross)

Spruce (start with the attached doc and I'll review what you draft)

Big Branch (start with the attached doc and then Brian T can help)

Bristol Bay (Palmer)

VT Circ Highway (Abu)

CD-5 Pipeline (Abu)

Port of Chehalis Regional General Permit (Julia)

Newhall Ranch Housing Development (Palmer)



2 pager template.docx



SpruceNo1_BreifingPaper 11-17-09.doc



Big Branch HQ info paper 27apr09 DH.doc



Mining_Big Branch Summary.doc



Port of Chehalis Fact sheet 9-22-2010.doc

ATTACHMENTS REDACTED - DELIBERATIVE

Chris Hunter

U.S. Environmental Protection Agency

Office of Wetlands, Oceans, & Watershed

(202) 566-1454

hunter.christopher@epa.gov

Brian Topping/DC/USEPA/US

01/25/2011 02:16 PM

To Jessica Martinsen, Allison Graham

cc Brian Frazer, Christopher Hunter, Jeffrey Lapp, Gregory Peck, Karyn Wendelowski, Kevin Minoli, Matthew Klasen, MichaelG Lee

bcc

Subject Re: Draft Spring Branch Documents

Jessica,

Here are suggested edits from OW, OGC, and WD in redline. Please review and pull together a clean final proposed draft for final review and approval.

Thanks for getting this moving early in the process,

Brian



ATTACHMENTS REDACTED - DELIBERATIVE

Letter_25.doc Mining_ECP_Briefing Paper_SpBrNo3 1-11-11-EPA_edits.doc

Brian Topping

US Environmental Protection Agency

Wetlands Division, Room 7231

Office: 202-566-5680, FAX: 202-566-1375

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Deliveries: EPA West -- Room 7231-S, 1301 Constitution Avenue, NW, Washington, DC 20004

topping.brian@epa.gov

Jessica Martinsen

[Brian, As promised I am sending along the draft...](#)

01/12/2011 04:08:39 PM

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 01/12/2011 04:08 PM
Subject: Draft Spring Branch Documents

Brian,

As promised I am sending along the draft documents for the Spring Branch No. 3 ECP project. These documents are also in review in our management chain. Thank you!! I look forward to your questions, and recommended changes.

[attachment "Mining_ECP_Briefing Paper_SpBrNo3 1-11-11.doc" deleted by Brian Topping/DC/USEPA/US] [attachment "SpBrNo3 end of 60 day letter 1-11-11 JMEdits.doc" deleted by Brian Topping/DC/USEPA/US]

Jessica Martinsen
U.S. EPA Region III
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215-814-2783 (fax)

Matthew
Klasen/DC/USEPA/US
01/25/2011 02:21 PM

To Susan Cormier
cc Christopher Hunter
bcc
Subject FYI -- comments on guidance

Hi Susan,

You mentioned that it would be useful for ORD to see copies of comments received on the April 1 guidance with respect to scientific issues, and their potential overlap with the conductivity benchmark comments.

See attached below for all comments we've compiled thus far, including sections 3 and 4 on science and conductivity. I suspect those to be the most relevant regarding the ORD work.

(b) (5)

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

WORD ATTACHMENT REDACTED - DELIBERATIVE



Mining FINAL Draft Silva-Giles Memo - Clean.doc 110124_1_Background-summary (draft)_10058.pdf



110124_9_EJ-summary (draft)_10058.pdf

(b) (5)

If anyone in EPA could find a room large enough for this meeting, we can have it over there since I'm the only one in West.

Attached are also the draft summaries of comments received from the comment docket, split out by issue area. We're still waiting on 2 issue areas, which I will pass along when I have them.



101231_11_Overall_Comments-summary (draft)_10058.pdf 101231_2_Fed_Auth-summary (draft)_10058.pdf



101231_3_Science (draft)_10058.pdf 101231_4_Conductivity-summary (draft)_10058.pdf 101231_5_NPDES (draft)_10058.pdf



101231_6_CWA Section 404 (draft)_10058.pdf 101231_7_CWA Section 401 (draft)_10058.pdf 101231_8_NEPA (draft)_10058.pdf



101231_10_EconomicConsiderations-summary (draft)_10058.pdf

IX. Environmental Justice

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that will prevent harm to public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from affected communities are taken into consideration.

The issue area of Environmental Justice (EJ) includes characterization of EJ communities in Appalachia, comments on the adverse health effects as a result of surface mining activities and the adverse impacts to private and public water supply systems, and provides recommended changes in the Guidance specifically related to EJ.

There were a total of 81 tallied comments discussing the EJ issue. This issue received many comments from the various commenter categories, including those comments from state agencies, industry representatives, environmental and other Non-Governmental Organizations (NGOs), congressional delegates, private citizens, mass mailer campaigns, and comment letters of unknown or unspecified origin. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 9-1 on the next page presents the total comment letters by commenter category that address EJ.

Most comments acknowledge that Appalachia has been historically adversely affected by mountaintop mining operations. Government officials and industry affiliates appear to agree that the Guidance will result in further adverse effects on the Appalachian region, one of the poorest areas of the country. The Kentucky Energy and Environment Cabinet asks the pointed question: “how does the potential elimination of high wage jobs for citizens living in low-income, high unemployment areas of Appalachia, factor into the EJ decision-making process?”

Most comments from NGOs, private citizens, and mass mailers are supportive of the Guidance, and express that it will serve to improve environmental conditions in the Appalachian region by adding further protections toward public health and drinking water supplies.

Industry affiliates and many of the private citizen letters generally agree that further research is needed on the effects of surface mining and valley fills, although for different reasons relating to EJ, and should weigh socio-economic effects against environmental and human health effects.

Below are summaries, presented by commenter category, on the issue of EJ as it relates to the Guidance. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore, not all sub-issues are listed under each commenter category.

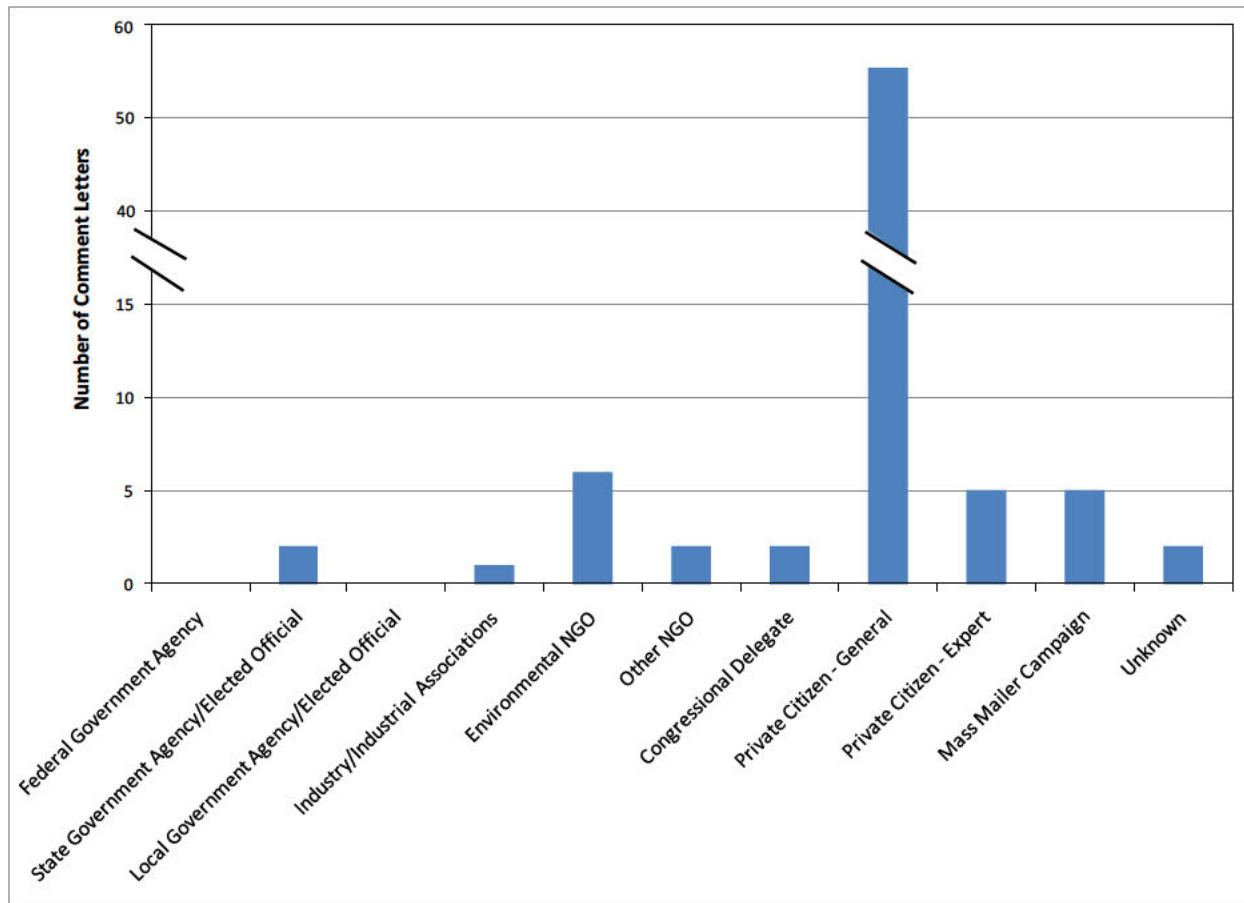


Figure 9-1. Environmental Justice, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

The United States Department of the Interior (DOI) was the only federal agency to submit comments regarding the Guidance. While three documents were submitted by the DOI, two are identical (Doc. #0695 and 0799), and the third document (Doc. #0775) is a placeholder alerting the docket of forthcoming comments. The DOI did not comment on the issue area of EJ.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

A total of three state agencies submitted comments to the docket: The Kentucky Energy and Environment Cabinet (Doc. #0012), the Commonwealth of Virginia Department of Mines, Minerals and Energy (DMME; Doc. #0348.1), and the West Virginia Department of Environmental Protection (WVDEP; Doc. #s 0614.1 and 0614.2). The Commonwealth of Kentucky generally supports the Guidance, but presents a series of questions, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations. The DMME and the WVDEP, on the other hand, are generally not supportive of the Guidance, each contending that the Guidance does not specifically apply to their states. The WVDEP, however, did not comment upon EJ issues.

a. Characterization of EJ Communities in Appalachia

The Kentucky Energy and Environment Cabinet comments that mountaintop mining and valley fills seem to be common only in Central Appalachia and questions EPA's focus on this region by asking, "Is it U.S. EPA's determination that surface coal mining is restricted to Appalachia (p. 6)?"

b. Adverse Health Effects as a Result of Mining Activity

The Kentucky Energy and Environment Cabinet acknowledges that "each Federal agency shall make achieving environmental justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (p. 4), and poses the question: "How does the potential elimination of high wage jobs for citizens living in low-income, high unemployment areas of Appalachia, factor into the EJ decision-making process?"

Approaching this topic from a different angle, and by way of defending their position regarding the lack of applicability of the Guidance to surface coal mining practices in Virginia, DMME (Doc. #0348.1) makes a passing reference to EJ issues with regard to the adverse effects of surface mining on human health. They note: "Human health studies referenced [in the Guidance] do not take into account the disproportionately high rate of drug abuse, tobacco use, lack of proper sanitation prevalent in the coalfields, and other major factors contributing to poor human health in the region" (p. 2); suggesting that surface mining practices are not the only factors contributing adversely to human health in the region, or at least in Virginia.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The letter from a local government agency or elected official was submitted by a city councilman from St. Charles, Kentucky (Doc. #0728). It does not address EJ.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Twelve comment letters were submitted by representatives of the coal mining industry, and in general are not supportive of the Guidance. Of these 12 letters, five almost identical letters were submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients. The bodies of all five letters are identical, except for the name of the represented clients: Gorman Company, LLC (Doc. #0013); Kentucky Union Company (Doc. #0014); Black Gold Sales, Inc. (Doc. #0016); Hazard Coal Corporation (Doc. #0017); and Kycoga Company, LLC (Doc. #0018). The Frost Brown Todd letters were only summarized once, and were the only letters addressing EJ under this category.

a. Characterization of EJ Communities in Appalachia

With respect to EJ, Frost Brown Todd claim that the strict standards in the Guidance will disproportionately impact traditionally poor communities, and that EPA is placing too much

emphasis on environmental impacts while ignoring socio-economic impacts. Specifically, they claim the Guidance will result in “economic devastation of large swaths of one of the poorest regions in the nation,” (p. 6) and that EPA is placing “a disproportionate emphasis on potential impacts to community water supplies, as part of the CWA’s antidegradation socio-economic analysis, while ignoring the potential severe harmful socio-economic effects that would be inflicted on low-income communities throughout Appalachia” (p. 5).

d. Recommended Changes in Guidance Relating to EJ

Frost Brown Todd request that EPA withdraw its Guidance and “step back from this rash rush to judgment and recommit itself to a regulatory policy based on sound science, economic rationality, and a fair balancing of the many factors that comprise the public interest” (p. 9), claiming that if this is done, “the surface coal mining industry of Appalachia will be able to continue to play a key role in our nation’s economic future while serving as proud stewards of our Appalachian environmental heritage” (p. 10).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

Six letters submitted by the following environmental NGOs commented on EJ:

- The Sierra Club (Doc. #0225.1);
- Southern Appalachian Mountain Stewards (Doc. #0344);
- Appalachian Voices and Waterkeeper Alliance (Doc. #0362.1);
- American Rivers et al.: one common comment submitted collectively by a number of environmental and other NGOs including American Rivers, Caretakers of God’s Creation, Center for Biological Diversity, Citizens Against Longwall Mining, Citizens Coal Council, Clean Water Action, Coal River Mountain Watch, Concerned Citizens of Giles County, Defenders of Wildlife, Earthjustice, Eco-Justice Collaborative, Friends of the Earth, Global Community Monitor, Greenpeace, Kentucky Resources Council, Maryknoll Office for Global Concerns, Mountain Watershed Association, Natural Resources Defense Council, No Biomass Burn, Ohio Valley Environmental Coalition, Public Citizen, Rainforest Action Network, Sierra Club, United Methodist Women, University of KwaZulu-Natal Centre for Civil Society Environmental Justice Project, Waterkeeper Alliance, and West Virginia Highlands Conservancy (Doc. # 0361.1);
- The Rainforest Action Network (Doc. #0366); and
- Earthjustice et al.: one common comment submitted collectively by a number of environmental and other NGOs including Earthjustice, Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy, Public Justice, Sierra Club, Coal River Mountain Watch, and Appalachian Center for the Economy and Environment (Doc. #0610.1).

These six letters are in general support of the Guidance, and comment on EJ communities in Appalachia, and adverse health effects and impacts to water supply systems, and propose recommended changes to the Guidance related to EJ issues.

a. Characterization of EJ Communities in Appalachia

Five of the environmental NGO comments address EJ in Appalachia, with four of them arguing that mountaintop mining has been adversely impacting many communities for too long, and it is time for change. The fifth NGO comment, from Earthjustice et al., points to adverse impacts from mountaintop activities, references an EJ petition submitted to EPA, and argues that sequencing approvals of valley fills represents a prejudice to residents of Appalachia when permittees can modify mitigation plans after the opportunity for public comment has closed.

Specifically, Southern Appalachian Mountain Stewards (Doc. #0344) describe local residents as feeling “hopeless here in the past” and hope that EPA will “adopt permanent regulations that end mountaintop removal mining” so they can “rebuild [their] lives and maybe, what’s left of [their] mountains can be saved.”

American Rivers et al. (Doc. #0361.1) contend: “The people of Appalachia have suffered too long from the consequences of harmful regulatory loopholes that allowed the region’s waters to be used as waste disposal systems, and from the federal government’s refusal to enforce the Clean Water Act at every step.”

Arguing against the line of reasoning that coal mining is a driving economic force in the area and should be protected, Appalachian Voices (Doc. #0362.1) quote a 2008 article publication in *Environmental Justice* by Dr. Hendrix to contend that “coal mining perpetuates poverty” and “remains an important part of these economies because underdeveloped infrastructure, blasted landscapes, poorly educated workforces, environmental health hazards, and chronically unhealthy populations perpetuate themselves over time and present strong discouragements to new business and population immigration” (p. 10).

Rainforest Action Network (Doc. #0366) commends EPA for recognizing mountaintop mining’s potentially “adverse environmental and health impacts on communities in the vicinity of mining operations” (p. 5) and for its “long-overdue focus on developing and implementing rules pertaining to a consideration for environmental justice concerns in the review of MTR/VF permit applications” (p. 5).

Earthjustice et al. (Doc. #0610.1) argue that mountaintop removal mining activities in Appalachia “unquestionably inflict disproportionate impacts upon the health and wellbeing of low-income and minority populations” (p. 9) and support EPA in its decision to identify and address these impacts for “all federal decisions and actions relating to Appalachian surface coal mining” (p. 10). They also argue that the sequencing approvals of valleys fills is a significant EJ issue, in that it does not provide residents of Appalachia an opportunity for public comment on future modifications to an existing mitigation plan, “particularly if the modifications allow the permittees to continue destroying waters after water quality excursions have occurred based on mitigation plans that have not been released for public comment” (p. 9). Earthjustice et al. also provide recommendations to improve the Guidance relative to EJ issues. These are further described under Sub-section d.

b. Adverse Health Effects as a Result of Mining Activity

Three of the four environmental NGOs commenting on adverse health effects from mining activities mention it in passing and do not provide details on the impacts. On the other hand, the fourth letter, submitted by Appalachian Voices and Waterkeeper Alliance, purports a correlation between physical health and surface mining in Appalachia.

The Sierra Club (Doc. #0225, p. 1) argues that steep slope surface mining has threatened the Appalachian communities with increased health risks. Rainforest Action Network (Doc. #0366, p. 2) wishes EPA to “strengthen its focus on the ‘elimination’ and ‘avoidance’ of environmental and human health impacts.” Finally, Earthjustice et al. (Doc. #0610.1 p. 9) argues that mountaintop mining and waste disposal activities in Appalachia “unquestionably inflict disproportionate impacts upon the health and wellbeing of low-income and minority populations.”

Appalachian Voices and Waterkeeper Alliance (Doc. #362.1, p. 10) reference the Gallup-Healthways Well-Being Index™ to demonstrate a correlation between residents’ physical health and the extent of surface mining in their state. They contend: “The three districts where mountaintop removal is most prevalent scored the lowest in the physical well-being rankings of all 435 Congressional districts in 2008 and 2009;” and: “Kentucky’s 5th district and West Virginia’s 3rd - the two district where almost all mountaintop removal has occurred, ranked last and second to last in the overall rankings (see <http://www.ahiphiwire.org/WellBeing/>).”

c. Adverse Impacts to Private and Public Water Supply Systems

Two environmental NGOs commented on adverse impacts to private and public water supply systems but do not provide details on the impacts. The Sierra Club (Doc. #0225, p. 1) contends that mountaintop mining threatens Appalachian communities “with increased flooding, polluted water sources, and increased health risks.” Earthjustice et al. (Doc. #610.1, p. 10) quote EPA on “adverse effects on drinking water supplies or fisheries ...” to provide recommended changes to the Guidance, further discussed under Sub-section d.

d. Recommended Changes in Guidance Relating to EJ

Three environmental NGOs provided recommendations for changes to the Guidance related to EJ concerns: Appalachian Voices and Waterkeeper Alliance (Doc. #362.1), the Rainforest Action Network (Doc. #0366), and Earthjustice et al. (Doc. #0610.1). Most NGOs approve of EPA’s efforts to address EJ, but feel that the Guidance is not specific enough as to how EJ concerns must be addressed. They recommend additional opportunities for public comment in the permitting process so Appalachian communities can voice their concerns.

Appalachian Voices and Waterkeeper Alliance (Doc. #362.1) claim that the lack of specificity for addressing EJ issues will result in “a substantial risk that the Guidance will encourage EPA staff to address environmental justice concerns with rhetoric only, rather than actually providing input and analysis” (p. 9). They make the following two recommendations to EPA and suggest

that: (i) “EPA use and conduct comparative socioeconomic analyses in evaluating environmental justice concern,” and (ii) “EPA take a proactive approach to engage residents that are likely to be directly impacted by the specific permitting actions to ensure environmental justice concerns are addressed.”

Regarding comparative socioeconomic analyses, Appalachian Voices and Waterkeeper Alliance argue that short-term benefits from job creation provide a narrow economic view that may not be in the best long-term economic interest of a community. They contend that “comparative analyses of Appalachian communities are increasingly available in regard to the impacts of coal mining on the economy and health of communities” (p. 10). They provide examples to their argument, including research by Dr. Michael Hendryx at West Virginia University, information from the Gallup-Healthways Well-Being Index, and a 2005 economic study by the Appalachian Regional Commission regarding long-term trends in economic distress in counties across Appalachia.

Regarding proactive public participation, Appalachian Voices and Waterkeeper Alliance make the case that while communication flows regularly between regional EPA offices and coal companies, efforts to contact residents who may be impacted are insufficient. They recommend that “potential impacts on the homes and water supplies of low-income residents near proposed operations (...) be considered alongside any analysis of practicability by the applicant” (p. 12). They also propose: “The final guidance (...) specifically encourage EPA staff to proactively meet with local residents to learn about their concerns and conditions, represent their views in negotiations with mining companies and other agencies permits, and provide equal weight to the concerns of impacted residents that they provide to the economic practicability concerns of mining companies in their decision-making” (p. 12).

While applauding “USEPA’s efforts toward clarifying and implementing articles of Environmental Justice in relation to mountaintop removal mining” (p. 5), the Rainforest Action Network (Doc. #0366) argues that the permit review process lacks clarity on “how the agency will integrate Environmental Justice concerns” (p. 8). They advocate for the development of rules or guidelines to address the issue. The Rainforest Action Network refers to the Pine Creek No. 1 and Hobet 45 mining permits to showcase the insufficient opportunity for public participation in permit reviews, and to the Spruce No. 1 mine to recommend a standard for analysis of impacts to EJ communities. They argue that EPA’s recommendation for “additional analysis of the potential for disproportionately high and adverse effects on the low-income populations” (p. 8) for the Spruce No. 1 permit should have been required for the Pine Creek No. 1 and Hobet 45 mining permits and should become a required “standard for all future permits reviewed.”

Recommendations from Earthjustice et al. (Doc. #0610.1) related to EJ are focused on the arguments that sequencing of valley fills takes away residents’ opportunity to comment on changing mitigation measures, and that the Guidance is not sufficiently specific to address all adverse impacts in a satisfying manner. Earthjustice et al. argue that sequencing valley fills “violates the legal requirements for public notice and comment under section 404(a) and (c), and CWA regulations at 40 C.F.R. § 230.94(b)” (p. 9), and prejudices residents of Appalachia. They also contend that potential impacts on drinking water supplies, fisheries, or wildlife are not

sufficiently addressed by the Guidance, and recommend that EPA “include in its final Guidance a more complete discussion of potential impacts related to Appalachian culture and public health, such as is set forth in EPA’s Spruce RD at 74-77 and Hendryx, M., Mortality Rates in Appalachia Coal Mining Counties: 24 Years Behind the Nation, Environmental Justice, Vol. 1, Num., 1, 2008” (p. 10). They also recommend that EPA staff implement E.O. 12898 “by addressing impacts on: other subsistence food and herb resources (...); decreased property values associated with nearby mining, slurry ponds, and valley fills (...); and increased risks of flooding” (p. 10).

6. OTHER NGOS

Two letters were received from other NGOs that commented on the issue area of EJ. The NGOs are:

- Kentuckians for the Commonwealth; and
- Alpha Natural Resources.

The Kentuckians for the Commonwealth’s (KFTC) letter (Doc. #0796) is in general agreement with the Guidance, while the letter from Alpha Natural Resources (Doc. #0591 and attachments) is not in support of the Guidance.

c. Adverse Impacts to Private and Public Water Supply Systems

Many members of the KFTC live in communities where the water quality has been negatively impacted from coalmining activities. KFTC welcomes the Guidance and states, “this Guidance is a necessary first step for stopping and reversing this accumulated poisoning of our streams” (p. 1).

Alpha Natural Resources argues that there are other factors that could impact water quality, such as untreated domestic sewage. They claim that EPA has overlooked the impact that untreated domestic sewage has on water quality, stating this is a major factor that is “well-known among those involved in water quality issues in the region” (p. 4).

7. CONGRESSIONAL DELEGATES

Two comment letters were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, and address EJ concerns. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

a. Characterization of EJ Communities in Appalachia

Both letters are opposed to EPA's Guidance, with one letter (Doc. #0011, p. 1) expressing concern that "aiming this guidance only at surface coal mining in Appalachia increases the disadvantage already suffered by the industry in this region when compared to Western mining operations." The other letter (Doc. #0015, p. 1) further recommends withdrawing the Guidance altogether given the "far reaching effects of this guidance on the people who live and work in Central Appalachia."

8. PRIVATE CITIZEN - GENERAL

Fifty-six comment letters, typically one page in length, received from members of the general public commented on the issue of EJ. Two letters (Doc. #s0249 and 0442) disagree with the Guidance, while the remaining private citizens either support the Guidance or are opposed to mountaintop mining in general.

a. Characterization of EJ Communities in Appalachia

The two letters in disagreement with EPA's Guidance suggest that the Guidance will further destroy an economy that is already struggling. One commenter (Doc. #0249) suggests that valley fills are common in other areas of the country stating: "We do it all the time outside of this region to prepare land for housing development, shopping malls, community centers, and government building. Why should Central Appalachia be any different, because the people there are seen as ignorant and poor?"

Several letters in support of the Guidance also comment on this issue. One commenter (Doc. #0736) states: "Poverty-stricken citizens cannot afford the thousands of dollars (for which they, not the country are financially responsible) to replace polluted wells with 'town water'." Another commenter (Doc. #0422) states: "the EPA needs to be realistic about the environmental justice issues related to permitting and placement of new industrial sites, especially considering new evidence that some populations may be negatively affected more than others because of the effects of particulates and heavy metals and how they influence specific genes."

b. Adverse Health Effects as a Result of Mining Activity

More than half of the comment letters received by general private citizens discuss mountaintop mining and valley fills as they relate to public health. Many feel one of the top priorities of EPA should be to protect the people of Appalachia and several commenters suggest that EPA implement additional restrictions to protect the local people and wildlife (e.g., Doc. #0266). One commenter (Doc. #0790) cites research that "shows an increased incidence of chronic illness, including kidney disease, in communities with surface mining and that these health disparities occur in proportion to the level of coal production in the area." Even the single commenter in disagreement with the Guidance (Doc. #0249) suggests that "EPA should fund research to fully understand the impacts of valley fills on public health."

c. Adverse Impacts to Private and Public Water Supply Systems

Impacts to water supply systems are a concern for over half of the general public. Many people suggest mountaintop mining destroys water sources. One commenter (Doc. #0239) remarks “It is a disgrace that in large areas of eastern Kentucky one cannot drink the local water.” One commenter (Doc. #0242) summarizes many general opinions that “every American not only has the right to access water but the right to clean, drinkable water.” Another commenter (Doc. #0631) discusses the statewide impacts on clean water saying: “What is put in the streams and rivers in eastern Kentucky eventually affects the water quality of everyone in our states.”

d. Recommended Changes in Guidance Relating to EJ

Two letters recommend changes regarding EJ in the Guidance. Both letters are in support of the Guidance, with one letter (Doc. #0267) stating: “the final guidance recognizes the need to protect human health and preserve waterways for the benefit and enjoyment of local communities as a top priority.” The other letter (Doc. #0566) urges EPA to “strengthen the Environmental Justice components of the guidance by requiring specific public involvement procedures to assure that low-income residents who are disproportionately affected by mining have adequate opportunities to be involved in decision-making.”

9. PRIVATE CITIZEN - EXPERT

Five comment letters submitted by private citizen experts address the issue EJ. The letters focus on the characterization of EJ communities in Appalachia, adverse health effects as a result of mining, and the adverse impacts to private and public water supply systems. All five letters from this commenter category group generally support the Guidance. Three of the commenters identify themselves as having a background in geology, the fourth is a proclaimed expert in the field of biology, and the fifth is a retired writer and editor who worked on regulatory documents for many contaminated sites.

a. Characterization of EJ Communities in Appalachia

The general feeling from two of the commenters on this issue is concern for the Appalachian communities. One commenter expresses support for the Guidance as well as the belief that the Guidance should be even more stringent to better protect the communities affected by surface coal mining. This commenter (Doc. #0112, p. 2.) states: “After years of neglect by EPA, Appalachia deserves better than another failed experiment that allows for the damage to start before the impact of the permit is appropriately assessed, in permits that put a local community in limbo while decisions about the future of their waters get made behind closed doors.” The other commenter (Doc. #0782, p. 1) feels that the heritage, biodiversity, and culture of the Appalachian region has been detrimentally impacted by mining and states: “As an American, I am affected by the lack of concern for the people of Appalachia.”

b. Adverse Health Effects as a Result of Mining Activity

The commenter mentioned above as being “affected by the lack of concern for the people of Appalachia” (Doc. #0782) also comments on the issue of adverse health effects resulting from mining. This commenter requests: “I am asking you to please take a closer look at the mounting scientific evidence which clearly shows the severe negative impact that mountaintop removal mining has on the environment and human health. The EPA developed standards for healthy stream environment. The EPA should be held accountable for maintaining these standards by preventing MTR [mountain top removal] facilities from exceeding safe contaminant levels in streams.” This statement further emphasizes the commenter’s point of view that the Guidance standards should be enforced on permits to protect the Appalachian communities from the adverse health effects caused by mining activities.

c. Adverse Impacts to Private and Public Water Supply Systems

Three of the expert commenters addressing this issue area are from the Appalachian region, and express their concern for the protection of drinking water. One of them states (Doc. #0729, p. 1): “Headwater streams need protection from this destructive and unsustainable practice, to endure quality groundwater for us to drink, and to preserve our mountain views and heritage”. The second commenter (Doc. #0744) states in reference to the leachate from the surface coal mining debris piles, “The minerals and heavy metals go right into my water supply.” Similarly, the third commenter (Doc. #0660, p.1) contends: “A claim that a mountain can be ‘put together again’ always reminds me of the Humpty Dumpty rhyme. No. All of the king’s horses and men cannot put our mountains back together again – nor can they gather up all the heavy metals, etc. that leach out of the rocks and coal and prevent serious contamination of our headwaters, and thus our surface and groundwater (in a fractured bedrock topography). OUR DRINKING WATER, and the water that grows much of our food.”

10. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “modified mass mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. The docket identified a total of nine mass mailing campaigns, with seven campaigns in support of the Guidance, and two campaigns in opposition to the Guidance. Four of the seven campaigns in support of the Guidance (Doc. #0022 sponsored by Earthjustice, and Doc. #s 0600, 0602, and 0603, sponsored by unknown organizations) address the same issues, and exhibit very similar wording.

Of the nine campaigns, five comment on the EJ issues. These campaigns are sponsored by the following organizations, and are identified by a representative comment letter number, as specified by the docket:

- Earthjustice (Doc. #0022);
- The Sierra Club (Doc. #0103);
- Unknown (Doc. #0600);
- Unknown (Doc. #0602); and

- Unknown (Doc. #0603).

All five campaigns listed above support the Guidance, and suggest that the Guidance be strengthened and finalized. Altogether, these campaigns address EJ communities, adverse health effects, and impacts to water supply systems.

a. Characterization of EJ Communities in Appalachia

Earthjustice (Doc. #0022) believes that it is time for a change in Appalachia: “After years of neglect by EPA, Appalachia deserves better than another failed experiment that allows for the damage to start before the impact of the permit is appropriately assessed” (p. 2).

b. Adverse Health Effects as a Result of Mining Activity

Arguing that mountaintop mining has negative health impacts, three mass mailing campaigns from unknown sponsoring organizations (Doc. #s 0600, 0602, and 0603) recommend that EPA “take specific steps in the permitting process to collect information about public health impacts, and (...) fund research to further develop this vital information to fully understand the impacts of valley fills on public health.”

c. Adverse Impacts to Private and Public Water Supply Systems

Three mass mailing campaigns acknowledge adverse impacts to water supply systems associated with mountaintop mining. The Sierra Club contends “Appalachia cannot afford to continue to bury its streams and pollute entire watersheds (Doc. #0103).” Earthjustice (Doc. #0022) agrees “watersheds cannot afford to lose more waters, especially unique and vital headwater streams” (p. 2). Finally, the campaign sponsored by an unknown organization (Doc. #0602) argues that “surface coal mining in Appalachia is (...) destroying water supplies for human communities.”

11. UNKNOWN

Eighteen comment letters were received from anonymous commenters, and were classified in the “unknown” commenter category. These appear to have been submitted by the general public, but are not signed. They are approximately equally divided between comments in support and in opposition to the Guidance and/or mountaintop mining in general, but only two of these letters comment on the issue of EJ.

a. Characterization of EJ Communities in Appalachia

While not clearly stating a position of support or opposition to the Guidance, one commenter (Doc. #0422) expresses concern about the toxic effects of heavy metals in coal and requests that EPA “be realistic about the environmental justice issues related to permitting and placement of industrial sites.” The other anonymous comment (Doc. #0183) is in general support of the Guidance and is concerned that contamination of private wells will reduce local opportunities, particularly for the poor who “are pushed from their homes by mining activities” and experience rapidly decreasing property values.

c. Adverse Impacts to Private and Public Water Supply Systems

One of the anonymous comments (Doc. #0183) in general support of the Guidance established a relation between mountaintop mining activities and impacts to drinking water by claiming that “private wells are contaminated.”

I. Background/Basis for Guidance

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners will issue permits for these activities that will prevent harm to public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from affected communities are taken into consideration.

The Background/Basis for Guidance issue includes those comments, recommendations, and opinions, submitted by stakeholders regarding the basis for EPA's decision making in implementing this Guidance. This includes environmental impacts on watersheds, ecosystems, and regional wildlife, and public participation in the regulatory process.

There were a total of 91 tallied comments discussing the Background/Basis for Guidance issue. This issue received several comments from many of the commenter categories. Federal, state, and local governments or elected officials, industry representatives, environmental and other Non-Governmental Organizations (NGOs), congressional delegates, private citizens, mass mailer campaigns, and comment letters of unknown or unspecified origin provided comments on the environmental impacts of Appalachian coal mining. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 1-1 on Page 2 presents the total comment letters by commenter category that address the Background/Basis for Guidance issue.

Most comments in support of the Guidance on this issue area focus on the destructive nature of surface mining operations on the watershed and ecosystem, and the broader, long-term harm to the health of aquatic life within the impacted streams. Comments in opposition to the Guidance focus on the need for public participation and potentially rulemaking.

Federal, state, and local governments or elected officials, congressional delegates, and industry commenters focus on the aspect of public participation with regard to the issuance of the Guidance, generally stating that there was not sufficient public participation in the process, and they thereby challenge the overall validity of the Guidance. One state government agency, the Commonwealth of Kentucky Energy and Environment Cabinet, is generally supportive of the Guidance, but seeks clarification on its implementation through a series of questions.

Environmental and other NGOS, and most of the general public and mass mailing campaigns, focus their comments on the negative impacts of mountaintop mining to watersheds, ecosystems, and Appalachian wildlife, with a few commenters recommending that EPA further strengthen the Guidance, and/or further protect streams through rulemaking.

Below are summaries, presented by commenter category, on the Background/Basis for Guidance issue. Under each commenter category all sub-issues commented on are listed by letter (based

on the issue outline) and discussed. Not all commenter categories discussed all sub-issues; therefore, not all sub-issues are listed under each commenter category.

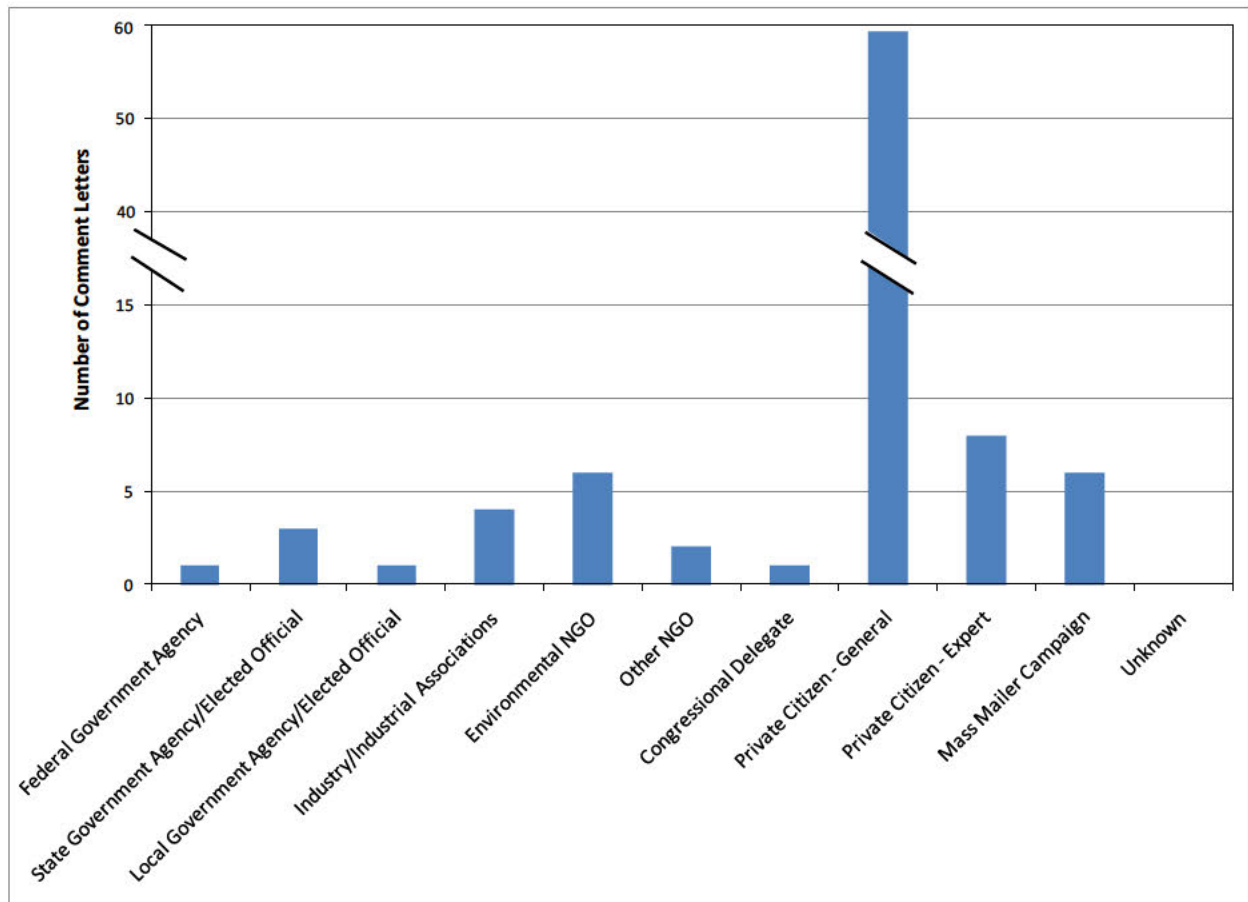


Figure 1-1. Background/Basis for Guidance, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

The United States Department of the Interior (DOI) was the only federal agency to submit comments regarding the Guidance. While three documents were submitted by the DOI, two are identical (Doc. #0695 and 0799), and the third document (Doc. #0775) is a placeholder alerting the docket of forthcoming comments. While generally supportive of the Guidance, the DOI comments focus on the process and lack of opportunity for public comment.

b. Public Participation in the Regulatory Process

The DOI expresses some reservations regarding the process by which the Guidance was issued, noting that it “took effect immediately upon publication without an opportunity for public notice and comment” (Doc. #0695; p. 2). The DOI asserts that the Guidance document “should have been issued through a process similar to the requirements of the Administrative Procedure Act” particularly since “its requirements read more like a rule than guidance” (p. 2).

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

Three state government agencies submitted comments to the docket: The Commonwealth of Kentucky Energy and Environment Cabinet (Doc. #0012), the Commonwealth of Virginia Department of Mines, Minerals and Energy (DMME; Doc. #0348.1), and the West Virginia Department of Environmental Protection (WVDEP; Doc. #s 0614.1 and 0614.2). Each commented on EPA's Background/Basis for Guidance. Specifically, they express concern over the public participation in the regulatory process, with both the DMME and the WVDEP challenging the legality of the Guidance, while expressing general lack of support. On the other hand, Kentucky appears to be generally in support of the Guidance, but is requesting additional information related to its objectives and more details on its implementation, by presenting a list of questions and requests for clarification. Kentucky requests "that these inquiries be responded to expeditiously in writing given the CWA § 402 surface coal mining permit applications pending before the Commonwealth, and those that we continue to receive daily" (p. 1).

b. Public Participation in the Regulatory Process

Both the Virginia DMME (Doc. #0348.1) and the WVDEP (Doc. #s 0614.1 and 0614.2) challenge the validity of the Guidance in part because of the process through which it was issued.

WVDEP (Doc. # 0614.1) also objects to the issuance of the Guidance in part because "Neither the State of West Virginia nor WVDEP was consulted about the Detailed Guidance or the standards announced therein," despite the fact that the Guidance was issued to the EPA Regional Administrators "whose jurisdictions include six Appalachian states (including West Virginia)" (p. 1). Similarly, WVDEP contends that such changes in policy "can be implemented only after following the process for doing so – promulgation of rules, adoption of legislation or otherwise – that assures there is the transparency that accompanies public involvement in these processes." WVDEP further states that EPA has "promulgated" the Guidance "without the benefit of these processes or the transparency and legitimacy they bring" (p. 2).

Further in their comment letter, WVDEP takes an even stronger stance, by stating that EPA's issuance of the Guidance constitutes a violation of Section 553 of the federal Administrative Procedure Act (APA), equating the "substantive revisions to applicable regulations" as presented in the Guidance to federal rulemaking (p. 7). Likewise, DMME (Doc. #0348.1) asserts that because the Guidance "establishes new regulatory standards for coal mine water discharge permitting," that these standards cannot be established "through an administratively issued guidance document, but must be promulgated under the federal Administrative Procedures Act to be effective" (p. 1).

Kentucky takes a slightly different approach by posing the following questions related to the issue of public participation in the regulatory process in their comment letter (Doc. #0012, p. 3): "3. Please explain EPA's decision to make this interim final guidance effective immediately given that: (1) comment is being sought on the guidance which could change its final content, (2) the Science Advisory Board (SAB) process has not been completed;" and "4. When will the SAB process begin and end, and will states be afforded an opportunity to provide comment and input on that process?"

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

Only one letter was posted by the docket from a local government agency or elected official, a city councilman from St. Charles, Kentucky (Doc. #0728). As a local government official, as well as a coal miner and electrical engineer, this individual writes to oppose the new water quality guidelines within the Guidance, and comments upon the background and basis for the Guidance as well as its economic implications.

a. Environmental Impact of Appalachian Coal Mining

Speaking to the environmental impact of Appalachian coal mining, the city councilman feels that the Guidance is overreaching in its environmental goals. He notes that “Our water and air are fine now,” and that current laws and regulations are sufficient to protect these resources, although seemingly acknowledging that the local laws “just need to be enforced uniformly” (Doc. #0728).

b. Public Participation in the Regulatory Process

Regarding the public participation in the regulatory process, the Kentucky city councilman urges the withdrawal of the Guidance, and recommends that EPA “process pending permit applications under existing rules and regulations while seeking comment from the public on the proposed changes through the formal rulemaking process” (Doc. #0728).

4. INDUSTRY

Twelve comment letters were submitted by representatives of the coal mining industry, and in general are not supportive of the Guidance. Of these 12 letters, five almost identical letters were submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients. The bodies of all five letters are identical, except for the name of the represented clients: Gorman Company, LLC (Doc. #0013); Kentucky Union Company (Doc. #0014); Black Gold Sales, Inc. (Doc. #0016); Hazard Coal Corporation (Doc. #0017); and Kycoga Company, LLC (Doc. #0018). These letters were only summarized once.

In addition to the Frost Brown Todd letter, three other comments were received from industry representatives, namely the Virginia Coal Association (Doc. #0346), the National Mining Association (Doc. #0611), and the Tennessee Valley Authority (Doc. #0612), a federally-owned corporation. These comments are related to public participation in the regulatory process.

b. Public Participation in the Regulatory Process

Frost Brown Todd generally contend that the Guidance has been instituted unlawfully without meeting requirements related to public participation in the regulatory process, by not including a public notice, and without providing the requisite comment period prior to making the Guidance effective. The Virginia Coal Association and Tennessee Valley Authority echo the need for additional public participation.

Specifically, Frost Brown Todd request: “EPA immediately withdraw the April 1 Guidance Memorandum; instruct all relevant state and federal agencies and EPA regions that the requirements of the Guidance are not to be implemented or applied under any circumstances until further notice; and not adopt any further requirements without the benefit of a full and fair public process, based upon input from all interested stakeholders, and in compliance with the requirements of notice-and-comment rulemaking” (p. 2). They also argue: “Because EPA clearly intends to enforce the Guidance as legally binding, and because it did not subject those requirements to notice-and-comment rulemaking prior to their implementation, that implementation is clearly unlawful” (p. 3).

Frost Brown Todd also express concern regarding permits approved under the interim Guidance prior to issuance of the final Guidance. They feel that these permits “are likely to be based upon requirements in the ‘interim’ Guidance that may prove to be unnecessarily stringent, scientifically invalid, or otherwise legally unnecessary or inappropriate based upon relevant law” (p. 4). Should the Guidance change after the public comment process, Frost Brown Todd express concern about impacts on “permits issued in the interim” (p. 4).

Frost Brown Todd feel the Guidance needs improvement and challenge its validity in that it “suffers from numerous inconsistencies and inaccuracies that threaten to create confusion and uncertainty for the mining industry, regulators, and the larger regulated community. These problems are symptoms of the EPA’s rush to issue and implement this Guidance without a thoughtful and thorough public and agency comment period” (p. 7).

Finally, Frost Brown Todd disagree with EPA setting a new benchmark for conductivity prior to receiving comments from the Science Advisory Board (SAB): “...EPA’s new ‘benchmark’ for conductivity has not yet been peer reviewed or subjected to public, agency, or scientific comment” (p. 9).

The Virginia Coal Association also argues for additional public review by stating: “The procedures in the Detailed Guidance were adopted without prior public review and EPA provides no record of having submitted the procedures for review by CEQ” (p. 2).

The National Mining Association also commented on the lack of adequacy of the public review process (p. 2), stating: “If EPA wishes for statutory changes, it must go to the Office of Management and Budget, develop an Administrative legislative proposal, and submit that proposal to Congress. If EPA wishes for regulatory changes, it must go through notice and comment rulemaking.” They also add: “EPA has not gone through notice and comment rulemaking to establish numeric Federal standards for conductivity for the Appalachian States” (p. 5).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

Six letters submitted by the following environmental NGOs commented on EPA’s Background/Basis for Guidance:

- The Sierra Club (Doc. #0225.1);
- Southern Appalachian Mountain Stewards (Doc. #0344);
- The Southern Environmental Law Center on behalf of the National Parks Conservation Association (Doc. #0347.1);
- American Rivers et al.: one common comment submitted collectively by a number of environmental and other NGOs including American Rivers, Caretakers of God's Creation, Center for Biological Diversity, Citizens Against Longwall Mining, Citizens Coal Council, Clean Water Action, Coal River Mountain Watch, Concerned Citizens of Giles County, Defenders of Wildlife, Earthjustice, Eco-Justice Collaborative, Friends of the Earth, Global Community Monitor, Greenpeace, Kentucky Resources Council, Maryknoll Office for Global Concerns, Mountain Watershed Association, Natural Resources Defense Council, No Biomass Burn, Ohio Valley Environmental Coalition, Public Citizen, Rainforest Action Network, Sierra Club, United Methodist Women, University of KwaZulu-Natal Centre for Civil Society Environmental Justice Project, Waterkeeper Alliance, and West Virginia Highlands Conservancy (Doc. # 0361.1);
- Rainforest Action Network (Doc. #0366); and
- Earthjustice et al.: one common comment submitted collectively by a number of environmental and other NGOs including Earthjustice, Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy, Public Justice, Sierra Club, Coal River Mountain Watch, and Appalachian Center for the Economy and Environment (Doc. #0610.1).

These six letters are in general support of the Guidance and comment on the negative environmental impacts of coal mining on Appalachian watersheds, ecosystems, and wildlife.

a. Environmental Impact of Appalachian Coal Mining

Most environmental NGO comments make a direct connection between mountaintop mining activities and negative impacts to watersheds, streams, and wildlife. Some comments are general, while others are specific to certain impacted watersheds and streams.

The Sierra Club (Doc. #0225.1) describes surface mining in Appalachia as a destructive activity, “devastating a biodiversity hotspot, burying some 2,000 miles of streams, wiping out aquatic habitat in downstream waters, and threatening communities with increased flooding, polluted water sources, and increased health risks.” This sentiment of destruction is echoed by most other environmental NGO comment letters. For example, Earthjustice et al. (Doc. #0610.1) qualify impacts from mountaintop removal mining and valley fills as “serious and devastating” for “environmental, human, and wildlife values in the Appalachian coal mining region” (p. 1).

Many environmental NGOs place an emphasis on the negative impacts to streams, particularly headwater streams and their ecosystems. Rainforest Action Network (Doc. #0366) cites the proposed determination on Spruce No. 1 surface mine to discuss adverse impacts of mountaintop mining and the “importance of headwater streams and their contribution to the overall health of the watershed and to wildlife living in the watershed” (p. 3). Another example is from American Rivers et al. (Doc. #0361.1) making a connection between losses of stream and “much broader

dangers to the ecosystems and people who depend on them” and assess that over “2,000 miles of streams have already been polluted or destroyed.”

The National Parks Conservation Association (Doc. #0347.1) highlights negative impacts from surface mining to particular streams and watersheds, including the Big South Fork National River and Recreation Area (p. 1) with its federally endangered fish and mussel species, and the Black Warrior River watershed in Alabama with many streams impaired by “sediment laden with heavy metal” (p. 1).

The Southern Appalachian Mountain Stewards (Doc. #0344) do not provide details about the negative impacts but support EPA’s actions in that they “brought some hope back to [them] by showing concern regarding protection of our mountains and watersheds” (p. 1).

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

Two letters received from the following other NGOs commented on EPA’s Background/Basis for Guidance:

- Kentuckians for the Commonwealth (KFTC); and
- Alpha Natural Resources.

The KFTC letter (Doc. #0796) is in general agreement with the Guidance, while the letter from Alpha Natural Resources (Doc. #0591 and attachments) is not in support of the Guidance.

a. Environmental Impact of Appalachian Coal Mining

The KFTC letter comments on the negative impact mining operations have on stream quality. They feel the Guidance is “a necessary first step for stopping and reversing this accumulated poisoning of our streams” (p. 1) and feel the Guidance will both prevent additional stream degradation and allow for improved stream quality.

Alpha Natural Resources is in general disagreement with the Guidance, claiming it is based on biased and incomplete science. They suggest that the impact of mining on stream function, particularly headwater streams, is similar to the impacts created by urbanization and/or agriculture. The letter states: “EPA’s study assumes that a MTM-VF, if present, is the sole causal factor affecting water quality and aquatic characteristics of the site, but such is certainly not universally true” (p. 9). Alpha Natural Resources mentions a study (Armstead et al., 2004) that concludes, “neither the changes in the biological community, nor changes in the water chemistry in the filled sites, appear to have significant adverse impacts on the stream function with respect to downstream segments” (p. 19). The letter claims this study is not acknowledged by EPA.

Alpha Natural Resources also claims that EPA has incorrectly identified the coalfield region as having a high degree of biodiversity and argue that the areas to the east and southeast of the coalfields, in the valley and ridge terrain, provide habitats for the greatest number of species.

They further point out reclaimed mine sites also offer a “diverse edge habitat most capable of supporting a rich and diverse wildlife population” (p. 18).

7. CONGRESSIONAL DELEGATES

Two comment letters were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, but only one letter addresses the issue of Background/Basis for Guidance. The letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming. The letter argues that the Guidance should be subject to formal rulemaking, including the need for public participation.

b. Public Participation in the Regulatory Process

The Congressional commenters express their opinion that the Guidance will have substantial regulatory impacts and will “impose additional regulatory barriers to the issuance of coal mining permits in Central Appalachia” (p. 1). The commenters therefore recommend that EPA issue the Guidance through a formal rulemaking process including a public comment and peer review prior to making the Guidance effective. The commenters also state: “We believe these proposals should be subject to public comment ... so as to strike a better balance between environmental protections and responsible governance” (p. 1). They also contend that “... substantive changes [to the CWA] should not be implemented absent extensive public participation and outside peer review” (p. 1).

8. PRIVATE CITIZEN – GENERAL

Two hundred and fifty seven comment letters were posted by the docket from members of the general public; of those, 59 commented on the issue area of Background/Basis for Guidance. Of those that commented on this issue area, all but three generally support the Guidance.

a. Environmental Impact of Appalachian Coal Mining

The opinion of many of the general private citizen letters is that the Appalachian watersheds, and in particular the streams and headwaters, have been destroyed by surface coal mining, having a negative effect on the watersheds and surrounding ecosystem. Several commenters in support of the Guidance comment on the impacts of mining on Appalachian wildlife. There is a general sentiment that coal mining is adversely impacting and destroying Appalachian wildlife, as well as its diverse ecosystem.

Regarding impacts to watersheds, many of the comment letters submitted by private citizens, although dissimilar in overall form, include the following same opinions; more protection is needed to preserve the waters of Appalachia, and to do otherwise would cause permanent damage to the area. For instance, one comment (Doc. # 0259) states that guidelines are “needed to reduce or better yet eliminate burying and poisoning of streams in Appalachia.”

Another comment letter (Doc. # 0267) states: “Scientific research tells us that ecological harm to streams caused by coal mining also endangers human health, therefore EPA should ensure that the final guidance recognizes the need to protect public health and preserve waterways...as a top priority.” A comment letter in support of the Guidance (Doc. #0009) states: “Thank you for setting this new policy and recognizing the negative impacts mountaintop removal has had on waterways and communities.”

One comment letter (Doc. #0515) states: “Mountain removal changes the weather patterns, biodiversity, topography, and potential for tourism income in some of the most ruggedly beautiful and remote portions of our state, all for the negative.”

The opinion of another commenter (Doc. #0060) is that: “Mountaintop removal mining is a travesty against nature that is destroying some of the most biologically diverse areas of North America and ‘restoring’ these lands with eroding grass at best.”

Contrary to the general opinions expressed by this commenter category, is the opinion from one commenter opposed to the Guidance (Doc. #0249). This commenter expresses the opinion that the basis for at least part of the Guidance is not supported by facts: “Lobbyists will tell you that scientific research suggests that one valley fill is too many, because of the unique headwater streams filled are lost forever (...) This is not supported by facts.”

Regarding impacts to wildlife, one comment letter (Doc. #0191) states: “Mountaintop removal mining is an extremely destructive practice that threatens and often destroys aquatic life, wild life, and communities.” Another commenter (Doc. #0496) claims “surface coal mining in Appalachia is killing and poisoning wildlife and destroying water supplies for human communities.”

b. Public Participation in Regulatory Process

Three letters comment on public participation in the regulatory process. One of them (Doc. #0566) supports the Guidance, and notes: “Current West Virginia permitting procedures are so obscure that most residents are not able to effectively participate to assure that their voices are heard. At many recent ‘hearings’ by WV-DEP, agency mining staff refuse to answer questions or provide relevant information, claiming that the hearing is solely for the public to speak.”

The other two letters are in opposition to the Guidance and request that EPA “process pending permit applications under existing rules and regulations while seeking comment from the public on the proposed changes through the formal rulemaking process” (e.g., Doc. #0752).

9. PRIVATE CITIZEN – EXPERT

Eleven comment letters were received from private citizen experts; eight of these letters commented on the issue area of Background/Basis for Guidance. Of those, all but one (Doc. #0401) generally support the Guidance, and comment on environmental impacts of Appalachian coal mining.

a. Environmental Impact of Appalachian Coal Mining

Overall, the general opinion of those in support of the Guidance is that the practice of surface coal mining is causing great harm to the watersheds, ecosystems, and Appalachian wildlife.

Three stream ecologists with expertise in aquatic ecology (Doc. #0613.1, p. 1) are of the opinion that surface coal mining has measurable and irreversible negative impacts on ecosystems within affected watersheds. Specifically, they state: “There is now abundant scientific evidence from studies conducted by both EPA scientists and by independent scientists that the environmental impacts of surface coal mining in the Appalachian region cause serious and irreversible harm to aquatic ecosystems. The risks to aquatic systems come not only from direct loss of habitats and species due to the mining process and valley fills but there are substantial risks to aquatic life that extend downstream from mine sites.”

In an attachment to their letter, the stream ecologists present the following scientific publication, titled, “*How many mountains can we mine? Ecological thresholds for freshwater ecosystems of the Central Appalachians* (Bernhardt et al. in review).” This publication (written by the commenters) presents findings and analyses of conditions found in watersheds downstream from mining operations, and supports the commenters’ theory that surface coal mining has measureable negative effects on the downstream aquatic ecosystems.

Other commenters share similar opinions about the effects of mining on watersheds. Two of the commenters that share this opinion have backgrounds in geology, one of whom is a geologist-hydrologist with a PhD. The PhD commenter (Doc. #0729) states: “You can’t simply fill in valleys and remove mountains, without creating disastrous floods and downstream contamination” (p. 1); while the other geologist (Doc. #0744) points out the pollution to the watershed caused by leachate from the debris piles created by mine operations: “MTR operators blast formerly impermeable or semi-permeable layers of limestone and sandstone and shale and then pile all that material back up.” The geologist also comments on pollutant leaching: “Acidic natural rainwater then gets into the now separated rock and leaches minerals and heavy metals out of the rock.”

Echoing these sentiments, a retired technical writer and editor with experience working on regulatory documentation for contaminated sites (Doc. #0660) states: “When overlaying rock on the coal seams is exploded into small pieces, its natural minimal toxicity increases many fold due to increase in surface area through and over which surface water runs, as it becomes our headwater streams and runs into our precious rivers.”

Another supportive point of view on this issue area comes from an ecologist that teaches stream and wetland ecology to high school students in Georgia. His comments (Doc. #0596) focus on the impact of surface coal mining on biodiversity in the ecosystem: “The loss of natural communities on the mountaintop, headwater streams, riparian plant and animal species and the impacts on downstream aquatic systems is a significant step toward destroying the ecosystems that sustain us all with their free services.” In general, this commenter expresses concern for both the stream and terrestrial ecosystem communities that in his opinion are destroyed by mountaintop removal practices and points out that “... destroying these communities wholesale

is a devastating blow to efforts of society to stop biodiversity loss and help recover species in decline while they still exist” (p. 1).

Contrary to the general opinions from this commenter category is the opinion of a professional engineer who works in the coal and coal combustion by-products field and is opposed to the Guidance (Doc. #0401). This commenter states: “The evidence of adverse effects to the environment is not substantiated by the record” (p. 2). The commenter references personal experiences growing up in Kentucky and states that due to the requirements of the clean air act, “The fact remains that the coal industry is safer than ever and the air in Kentucky is cleaner than at any time in my life” (p. 2). In general, the commenter focuses on the impacts of coal mining as an air quality issue in the environment rather than a water quality issue.

10. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “modified mass mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. The docket identified a total of nine mass mailing campaigns, with seven campaigns in support of the Guidance, and two campaigns in opposition to the Guidance. Four of the seven campaigns in support of the Guidance (Doc. #0022 sponsored by Earthjustice, and Doc. #s 0600, 0602, and 0603, sponsored by unknown organizations) address the same issues, and exhibit very similar wording.

Of the nine campaigns, six comment on the issue of Background/Basis for the Guidance. These campaigns are sponsored by the following organizations and are identified by a representative comment letter number, as specified by the docket:

- Earthjustice (Doc. #0022);
- Rainforest Action Network (Doc. #0798);
- Unknown (Doc. #0600);
- Unknown (Doc. #0599);
- Unknown (Doc. #0602); and
- Unknown (Doc. #0603).

All campaigns except the Unknown #599 support the Guidance. Campaigns in support of the Guidance address environmental impacts of Appalachian coal mining, while the campaign opposed to the Guidance addresses public participation in the regulatory process.

a. Environmental Impact of Appalachian Coal Mining

Most of the mass mailing campaigns in support of the Guidance comment on impacts of mountaintop mining activities on streams, particularly headwater streams, and express concern about the lost streams. Two campaigns wish to see further protection of streams, and another expresses concern about mountaintop mining impacts to wildlife.

Earthjustice (Doc. #0022) and two other mass mailing campaigns from unknown sponsoring organizations (Doc. #s 0600 and 0602) claim that “more than 2,000 miles of streams have

already been destroyed, and we cannot afford to lose more, especially unique and vital headwater streams.” Three mass mailing campaigns from unknown organizations (Doc. #s 0600, 0602, and 0603) blame valley fills for the loss of streams, claiming that “scientific research suggests that one valley fill is too many, because the unique headwater streams are lost forever, along with all of the ecological services they provide.” They also argue that “every valley fill becomes a source of pollution that contaminates the watershed downstream.”

The Rainforest Action Network campaign (Doc. #0798) expresses concern that permits for activities including valley fills were approved despite the Guidelines, which should protect headwater streams. They argue that “further action is crucial.” Another mass mailing campaign sponsored by an unknown organization (Doc. #0600) echoes this sentiment by suggesting that EPA “further increase protections for our streams and our communities.”

One mass mailing campaign sponsored by an unknown organization (Doc. #0602) expresses concern about wildlife in Appalachia. They claim that “surface coal mining in Appalachia is killing and poisoning wildlife” and that “the health of aquatic life and people living near or relying on these streams is jeopardized by mountaintop removal” with “endangered mussels, fish, and numerous other rare species (...) being sacrificed to surface coal mining.”

b. Public Participation in Regulatory Process

The campaign in opposition to the Guidance and sponsored by an unknown organization (Doc. #0599) requests that EPA withdraw its Guidance and “process pending permit applications under existing rules and regulations while seeking comment from the public on the proposed changes through the formal rulemaking process.”

11. UNKNOWN

Eighteen comment letters were received from anonymous commenters, and were classified as an “unknown” commenter category. These appear to have been submitted by the general public, but are not signed. They are approximately equally divided between comments in support and in opposition to the Guidance and/or mountaintop mining in general. None of these letters comment on the issue area of Background/Basis for the Guidance.

XI. Overall Comments

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Overall Comments issue includes those comments, recommendations, and opinions submitted by stakeholders in general support or opposition to the Guidance, and/or to mountaintop mining in general.

There were a total of 104 unique tallied comments posted by the docket as of December 1, 2010. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 11-1 on the next page presents the total comment letters that made an overall comment by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and commend EPA for issuing it; and are generally opposed to mountaintop mining in general. They argue that mountaintop mining activities are destructive of wildlife, forests, and streams, and have negative health impacts; and that the Guidance is based on sound science. The few private citizens in opposition to the Guidance express economic concerns. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters contend that the Guidance is legally flawed, will have negative economic impacts, and relies on insufficient scientific data and peer review. Congressional delegates argue that the Guidance was issued prematurely, will cost many jobs, and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club argues that the Guidance is based on sound scientific evidence and commends EPA for issuing it. The Kentucky Energy and Environment Cabinet highlights EPA's challenge of implementing existing requirements while protecting other interests, including the economy and energy supply.

Below are summaries of the overall comments, presented by commenter category. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline)

and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

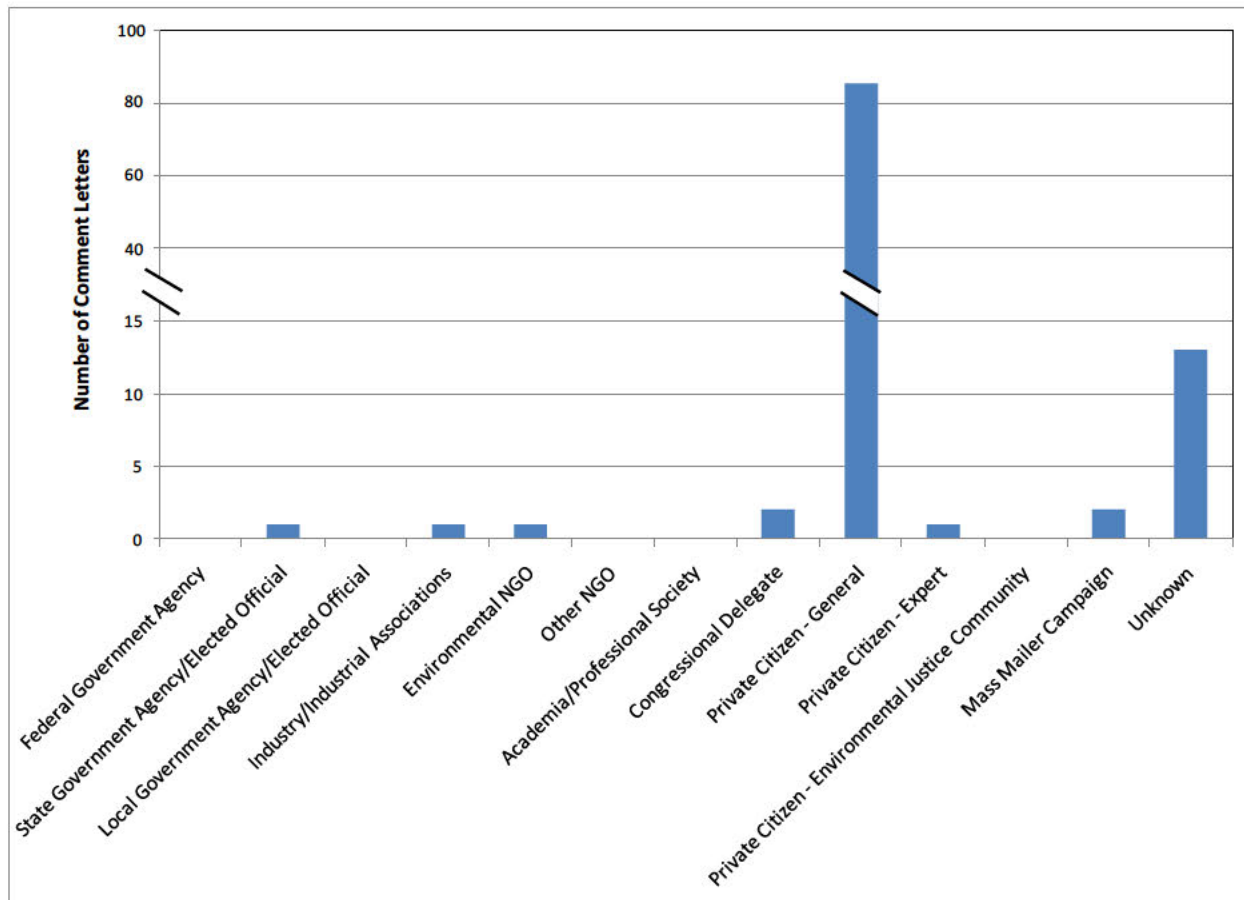


Figure 11-1. Overall Comments, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

a. General Support for the Guidance

The Kentucky Energy and Environment Cabinet agrees with EPA's commitment to developing environmentally effective, scientifically sound, and economically responsible approaches for

meeting existing requirements while not compromising the Appalachian region and depriving the entire nation of the benefits coal provides, both for the economy and energy supply.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

b. General Opposition for the Guidance

Frost Brown Todd argue that the Guidelines “impose insurmountable technical and economic burdens on the coal mining industry, effectively shutting down surface coal mining (and possibly significant underground coal mining) throughout much of Central Appalachia” (p. 2) and request the Guidelines be immediately withdrawn. The following several arguments are provided to support their request:

- “The Guidance Memorandum is legally flawed and imposes inappropriate requirements on the regulated community without following proper procedures” (p. 3);
- “EPA’s implementation of the Guidance threatens to effect unconstitutional taking of the property of mineral owners” (p. 6);
- “The April 1 Guidance Memorandum will create unnecessary confusion and uncertainty and treats the states, regions, and industries inequitably” (p. 7); and
- “The April 1 Guidance Memorandum relies on limited, questionable, and unproven scientific ‘data’ and analyses” (p. 8).

They further request EPA to “instruct the states, EPA regions, and other federal agencies not to implement or enforce any of the requirements contained therein” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on

EPA's Guidance. The Sierra Club (Doc. #0225.1) strongly supports the Guidance and commends EPA for issuing it.

a. General Support for the Guidance

The Sierra Club is of the opinion that the EPA was justified in implementing the Guidance immediately. They agree that the most recent, peer-reviewed scientific evidence was used as the basis for the Guidance and further state the Guidance is "necessary to protect water quality from the effects of mountaintop removal mining" (p. 2).

6. OTHER NGOS

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress and disagree with the Guidance. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

b. General Opposition for the Guidance

Both letters argue the Guidance was issued prematurely and urge EPA to withdraw it. Some congressional delegates (Doc. #0011) agree that regulations are necessary but suggest EPA "continue to work with the affected States, the involved federal agencies, and all stakeholders to develop guidelines that truly provide a balanced process for energy development and environmental protection" (p. 2).

9. PRIVATE CITIZEN - GENERAL

Eighty two comment letters, typically one page in length, were received from members of the general public. Two letters from private citizens (Doc. #0019, and Doc. #0249) disagree with EPA's Guidance. The remaining private citizen commenters either support the Guidance or are opposed to mountaintop mining in general.

a. General Support for the Guidance

The majority of the general public is in support of the Guidance and commends EPA for issuing it. Several commenters point out that mountaintop mining destroys wildlife, forests, and streams and are of the belief that the Guidance will help protect people and the environment from negative impacts of mountaintop mining. Many agree the Guidance has been based on the best available science and thank EPA for enforcing the CWA.

One commenter (Doc. #0009) sums up the feelings of the overall general public by saying, “I applaud the Environmental Protection Agency for setting a tough new policy that should protect waterways and communities from the destruction caused by mountaintop removal. The new policy represents the most significant administrative action ever taken to address mountaintop removal coal mining and reaffirms the administration’s commitment to science and environmental justice for the communities and natural areas of Appalachia.”

b. General Opposition for the Guidance

Both commenters in general opposition to the Guidance are concerned that mines will be closed, small towns will be devastated, additional poverty will be created, and residents will be forced to relocate. One comment letter states, “My family and many others like us will have to leave our state to find work (Doc. #0019).”

c. Opposed to Mining in General

Many in the general public are opposed to mining in general. Commenters argue it destroys natural resources and causes health problems. One commenter (Doc. #0020) states: “Please help bring an end to Mountaintop Removal. I just can’t believe this ever happened in the first place” (p. 2). Another commenter (Doc. #0025) points out that the profits earned by coal companies do not justify the negative impacts to people’s health and the environment and writes: “several billion dollars of income are earned by the coal companies but the costs to West Virginia alone amount to tens of billions of dollars in health costs and perhaps even larger amounts to the degradation of WV’s environment.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter (Doc. #0112) was submitted from a private citizen - expert commenting on the issue of federal authority to regulate these activities in EPA’s Guidance. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science, with more than three decades of experience in the public school system.

a. General Support for the Guidance

The commenter is in general agreement with the Guidance, concurring that there is unequivocal scientific evidence to supports the Guidance. The commenter is of the opinion that: “it is our duty as the most powerful species to exist on this planet to use our might to protect the integrity

of our life support systems for the benefit of all living things” (p. 1).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group had not been posted by the docket. Any comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

a. General Support for the Guidance

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized. They agree the most recent, peer-reviewed scientific information documents that mountaintop mining negatively impacts water quality.

13. UNKNOWN

Thirteen comment letters, typically one page in length, were received from unknown or unidentified commenters. One commenter is in general disagreement with EPA’s Guidance; the others are in general agreement.

a. General Support for the Guidance

The majority of the commenters in general agreement with the Guidance feel it will help protect public health and water quality from the impacts of mountaintop mining. Many commenters also urge EPA to strengthen and finalize the Guidance.

b. General Opposition for the Guidance

The commenter in general disagreement with the Guidance argues it is based on “scientific studies that are limited in scope and analysis (Doc. #0010).” The commenter feels the individual states should be able to administer their own water quality programs and define what constitutes stream degradation. The commenter claims the Guidance is a violation of states’ rights.

X. Economic Considerations

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of Economic Considerations includes those comments, recommendations, and opinions submitted by stakeholders regarding lost jobs or income, impacts to the national, state, or local/county economy, and general economic considerations.

There were a total of 12 tallied comments submitted to the docket as of December 1, 2010, discussing the economy. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, congressional delegates, and the general public. Most comments were received from private citizens or anonymous commenters. Figure 10-1 on the next page presents the total comment letters that address the economy by commenter category.

Private citizen (including anonymous stakeholders) comments are both in support with and in opposition to the Guidance. Those in support of the Guidance express the view that natural resources and the public health should outweigh economic considerations, including jobs. Those in opposition to the Guidance associate it with negative economic impacts both locally (i.e., at the individual level) and at a larger scale.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) is in general support of the Guidance but seeks clarification on Guidance implementation through a series of questions. Both groups contend that the Guidance may render mountaintop mining activities economically unfeasible, negatively impacting local economies and the industry and resulting in potential closures of mountaintop mining activities. They also make note of the Guidance's limited applicability to six states, which they contend will result in economic disparities. Questions from the Kentucky Energy and Environment Cabinet relate to economic concerns associated with lost job opportunities, geographic inequity of the Guidance applicability, and environmental justice for low-income, high-unemployment areas.

Below are summaries, presented by commenter category, on economic considerations. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

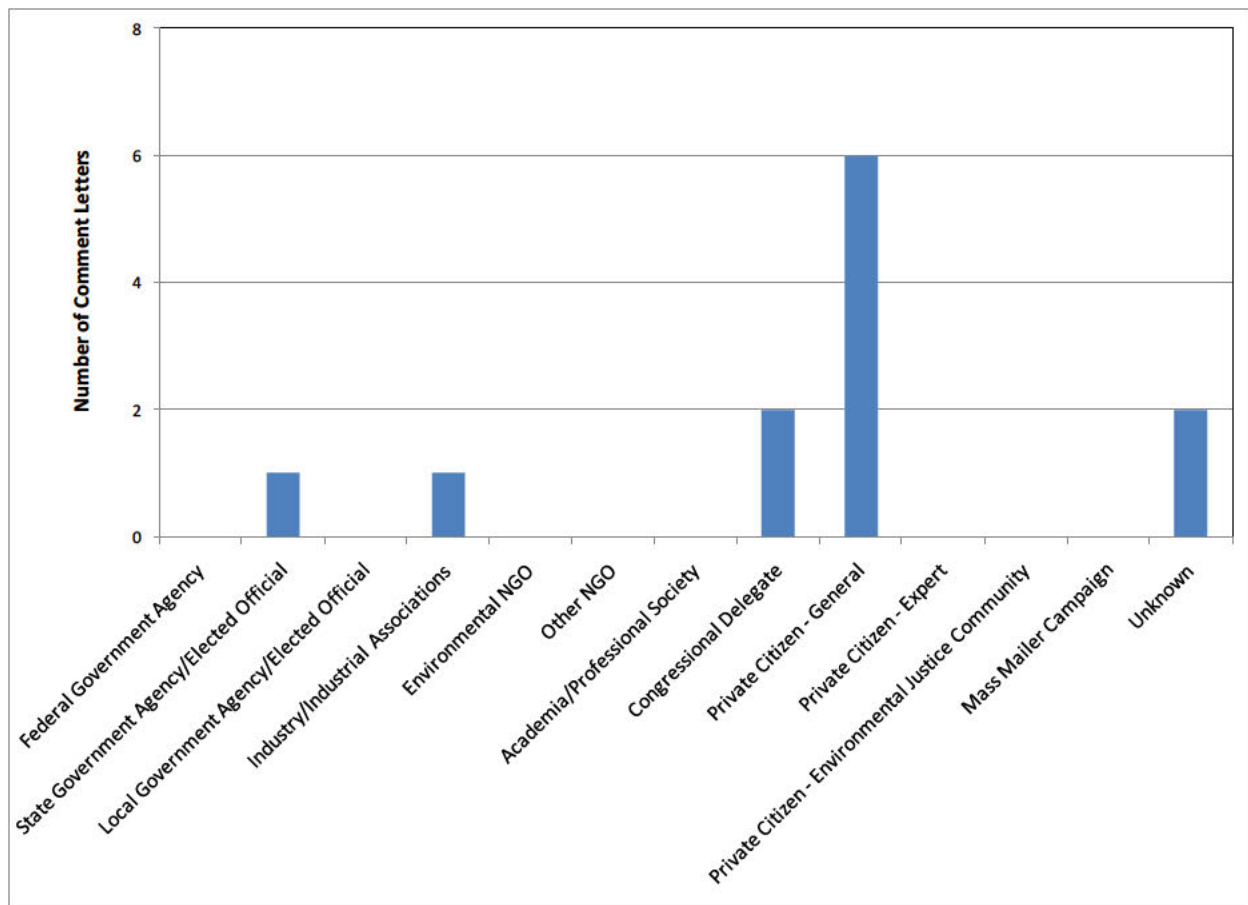


Figure 10-1. Economic Considerations, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations. They express concern that the Guidance is premature and may unnecessarily impact the economy.

a. Jobs Lost/Lost Income

The Kentucky Energy and Environment Cabinet is concerned that the Guidance may be premature and has the potential to cause more economic harm than good. They ask: “is there not

a potential for permit requirements to be imposed by U.S. EPA in the interim that are more restrictive or potentially more cost prohibitive than in the final guidance, resulting in job loss and economic hardship that could be avoided by waiting until the guidance is finalized. (p. 3)?”

c. Impacts to State Economy

The Kentucky Energy and Environment Cabinet points out that only six states (Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) are subject to the Guidance and speculate that the Guidance may be creating “economic inequity and a competitive disadvantage between the six targeted states and other coal producing states (p. 3)?”

e. General Economic Considerations

The Kentucky Energy and Environment Cabinet raises the issue of economic impacts to low-income areas of Appalachia. They acknowledge that “each Federal agency shall make achieving environmental justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (p. 4), and ask: “How does the potential elimination of high wage jobs for citizens living in low-income, high unemployment areas of Appalachia, factor into the EJ decision-making process?” (p. 4).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the economy. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance and argue that it will have negative economic impacts on the industry, resulting in potential closures of mountaintop mining activities.

a. Jobs Lost/Lost Income

Frost Brown Todd claim that the strict standards in the Guidance “will make most mining activities practically and economically infeasible” (p. 6). They further argue the Guidance focuses too much attention on community water supplies while ignoring “the potential severe harmful socio-economic effects that would be inflicted on low-income communities throughout Appalachia through the loss of employment” (p. 5).

b. Impacts to National Economy

Frost Brown Todd foresee impacts to the national economy, including loss of profits and resulting lawsuits against the federal government by the coal industry and property owners. They view the coal mining industry as “an essential part of our nation’s economic vitality and a key to our short- and long-term economic and energy security” (p. 9). They suggest the Guidance will cause significant loss of profits and lead to lawsuits filed by companies in the coal business and property owners to recover hundreds of billions of dollars of lost profits. They claim the Federal Government will be required to provide compensation for these lawsuits and “at such a tenuous financial time, this would have disastrous, wide-spread effects on our nation” (p. 7).

c. Impacts to State Economy

Frost Brown Todd point out that the Guidance focuses on eliminating a specific type of mining in only six states (Kentucky, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia) and argue: “This disparity creates dramatic economic inequities and puts these states and this industry at a crippling competitive disadvantage with industries in other states and regions. The result will be nothing less than catastrophic” (p. 8).

e. General Economic Considerations

Frost Brown Todd argue that the Guidelines “impose insurmountable technical and economic burdens on the coal mining industry, effectively shutting down surface coal mining (and possibly significant underground coal mining) throughout much of Central Appalachia” (p. 2). They further contend that EPA’s adaptive remedial action provision will “impose economically impracticable and technically unachievable mitigation requirements on them in perpetuity” (p. 8).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, and discuss economic considerations. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

a. Jobs Lost/Lost Income

Both letters express concern that the Guidance will jeopardize a significant number of jobs. For example, on letter states: “Permits issues under the Clean Water Act affect nearly 80,000 direct coal mining jobs in Appalachia” (Doc. #0015, p. 1).

b. Impacts to National Economy

The Guidance is specific to surface coal mining in Appalachia, and congressional delegates feel it “sorely fails to address the equally noble goal of economic fairness. The Appalachian states know all too well the challenges of economic inequity and any actions that would serve to further undermine the fragile economy of this region ought to be met with a robust federal effort to shore up and improve the economy” (Doc. #0011, p. 1).

d. Impacts to Local / County Economy

One letter argues that the Guidance will have a negative impact to the local economy and that “EPA has jeopardized the future of mining operations [and] the sustenance of local communities” (Doc. 0015, p. 1).

e. General Economic Considerations

Commenters express concern that the Guidance will have economic impacts to communities that have not had opportunity to provide input, as stated “with the country’s economy still

floundering and unemployment hovering near 10%, the potential economic impact of these policies validate our request that affected communities be given the opportunity to voice their concerns in the decision-making process” (Doc. #0015, p. 1).

9. PRIVATE CITIZEN - GENERAL

Seven comment letters, typically one page in length, submitted by members of the general public discuss economics. Two letters (Doc. #0019, and Doc. #0249) disagree with EPA’s Guidance, while the remaining general private citizen letters either support the Guidance or are opposed to mountaintop mining in general.

a. Jobs Lost/Lost Income

Commenters, both in support of and in disagreement with EPA’s Guidance, recognize it could impact the workforce. One commenter in disagreement with EPA’s Guidance is concerned “my daughter will not be able to attend college if my husband loses his job in mining” (Doc. #0019). Another commenter in general agreement with the Guidance states “I’m all for creating more jobs, and allowing people to use their land as they see fit. But I’m not going to let them trash what isn’t theirs –the water and air—in the process” (Doc. #0006, p. 1).

d. Impacts to Local / County Economy

One commenter in general opposition to the Guidance, is concerned that mines will be closed, small towns will be devastated, and residents will be forced to relocate: “my family and many others like us will have to leave our state to find work” (Doc. #0019).

e. General Economic Considerations

Many in the general public support the Guidance and hope it will be a “change to business as usual that places private profit above public resources” (Doc. #0088). Several commenters feel the protection of public health and waterways should outweigh economic concerns.

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing the economy had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

13. UNKNOWN

Two comment letters, both one page in length, received from unknown or unidentified commenters discuss the economy. One commenter is in general agreement with EPA's Guidance; the other is in general disagreement.

a. Jobs Lost/Lost Income

The commenter in general disagreement with the Guidance feels it has had a negative impact on the economy stating "our families were forced to leave to find work" (Doc. #0010). The same commenter further suggests the "true endangered species ... is the American worker."

d. Impacts to Local / County Economy

The commenter in support of the Guidance suggests people are being pushed from their homes by mining and argues that "property rapidly devalues due to mining activities nearby leaving poor people with few options" (Doc. #0183).

e. General Economic Considerations

The commenter opposed to EPA's Guidance feels it is a violation of states' rights and suggests "this administration does not care about the people of Appalachia and the industry that so many of us depend on to provide for our families" (Doc. 0010). This commenter feels individual states should be allowed to regulate water quality programs.

VIII. National Environmental Policy Act

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The NEPA issue includes comments and opinions submitted by stakeholders regarding cumulative impact analyses under NEPA, the need to prepare Environmental Impact Statements (EISs), and any recommended changes to the Guidance specifically relating to NEPA.

Three tallied comments submitted to and posted by the docket as of December 1, 2010, discussed NEPA. These comments were submitted by the following commenter categories: industry representatives, the general public, and an anonymous commenter. The general private citizen and the anonymous commenter are generally supportive of the issuance of the Guidance and encourage EPA to further its environmental protections when reviewing mountaintop mining projects. Industry commenters focus their comments on the need for preparing an EIS, citing a lack of sufficient information to support EPA's conclusion that an EIS should be required categorically for certain mountaintop mining projects affecting more than one mile of jurisdictional streams. They recommend that the Guidance be immediately withdrawn.

Below are summaries, presented by commenter category, on the NEPA issue. Under each commenter category all sub-issues commented on are listed by letter (based on the issue outline) and discussed.

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding NEPA. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance, and disagree on the requirement to prepare an EIS under NEPA for specific types of mining activities.

b. Need to Prepare Environmental Impact Statements

Frost Brown Todd contend that “EPA has prematurely, and without sufficient specific information, concluded that an environmental impact statement (‘EIS’) will be required under the National Environmental Policy Act (‘NEPA’) for any proposed mining activity that will affect more than one mile of jurisdictional ‘streams’ (...) Again, EPA has provided no information to support a general conclusion that all such actions will have a ‘significant effect’ on the human environment” (p. 6).

The commenters further argue that “Moreover, EPA has not subjected that conclusion to notice and comment, as would be required for any general determination to require an EIS for a whole category of activities (as is the case here)” (p. 6).

While not specifically providing recommendations for changes in the guidance relating to NEPA, the commenters conclude with a request that EPA “immediately withdraw the April 1 Guidance in its entirety” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

9. PRIVATE CITIZEN – GENERAL

Only one comment letter from a private citizen had been posted by the docket as of December 1, 2010. This individual, while not specifically referencing the NEPA process, encourages the EPA to “write specific steps in the permitting process which address the collection and analysis of data about the public health impacts (Doc. # 0186, p. 1)” of mountaintop removal coal mining.

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing NEPA had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

13. UNKNOWN

One letter (Doc. #0183) posted to the docket as of December 1, 2010, from unknown sources commented on NEPA. The commenter appears to be generally supportive of the Guidance, and encourages the EPA to “Enforce water quality requirements of CWA” and “incorporate WQBELs into permit requirements” again presumably referring to the information necessary for submittal within an EIS.

VII. Clean Water Act Section 401

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Clean Water Act Section 401 issue includes comments and opinions submitted by stakeholders regarding recommended changes to the Guidance specifically relating to Section 401 of the CWA.

There were a total of three tallied comments submitted to and posted by the docket as of December 1, 2010, discussing Section 401 of the CWA. These comments were all submitted by private citizens, one of whom is a citizen of Appalachia. Commenters express gratitude for the issuance of the Guidance and urge further protection under the CWA, citing the destructive nature of mountaintop mining practices to date.

Below are summaries, presented by commenter category, of the comments received on Section 401 of the CWA.

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will

be addressed in the final summary.

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

9. PRIVATE CITIZEN – GENERAL

Three comment letters posted by the docket as of December 1, 2010, and submitted by members of the general public commented on Section 401 of the CWA either directly or by reference to water quality issues. Additional comments received subsequently will be addressed in the final summary. The comments generally support the issuance of the Guidance, and recommend further measures. For example, one commenter recommends that EPA “further increase protections for our streams and our communities. Stream protections must be more permanent via rule-making. I urge the EPA to assure that state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance (Doc. #0247).”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

13. UNKNOWN

As of December 1, 2010, comments from this category group discussing the issue area of Section 401 of the CWA had not been posted by the docket. Any comments received subsequently will be addressed in the final summary.

VI. Clean Water Act Section 404

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The CWA Section 404 issue area includes those comments, recommendations, and opinions submitted by stakeholders regarding the following sub-issues:

- a. Federal Roles of EPA, the United States Army Corps of Engineers (Corps), and the Office of Surface Mining Reclamation and Enforcement (OSM) in Evaluating CWA 404 Applications;
- b. Independent Evaluation of Water Quality under CWA 404;
- c. Mine Design;
- d. Relationship of Water Quality to Significant Degradation under 230.10(c);
- e. Compensatory Mitigation under CWA 404;
- f. Monitoring and Reporting Requirements;
- g. Cumulative Impact Analysis under CWA 404; and
- h. Recommended Changes in Guidance Relating to CWA 404.

A total of 69 comments posted by the docket as of December 1, 2010 discussed the CWA Section 404. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 6-1 on the next page presents the total comment letters that address the CWA Section 404 issue, by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and support EPA's implementation of the CWA requirements and identify EPA and the Corps as responsible for the prevention of water quality degradation. These comments are not supportive of valley fills, viewed as destructive, or of stream creation, qualified as insufficient mitigation for stream loss. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry

commenters contend that the Guidance oversteps established authorities and regulatory structures, is incorrectly reflective of the so-called Hobet 45 mine case outcomes which they view as not necessarily applicable to all surface coal mining operations, and imposes unrealistic and unpredictable monitoring requirements. Congressional delegates urge EPA to withdraw the Guidance because it represents substantial changes that exceed the intent of the CWA, and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club disagrees with the sequencing of valley fills and compensatory mitigation, particularly for headwater streams, and urges EPA to further strengthen the Guidance requirements and ensure its prompt implementation in Appalachia. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which relate to mitigation.

Below are summaries, presented by commenter category, on the issue of the CWA Section 404. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

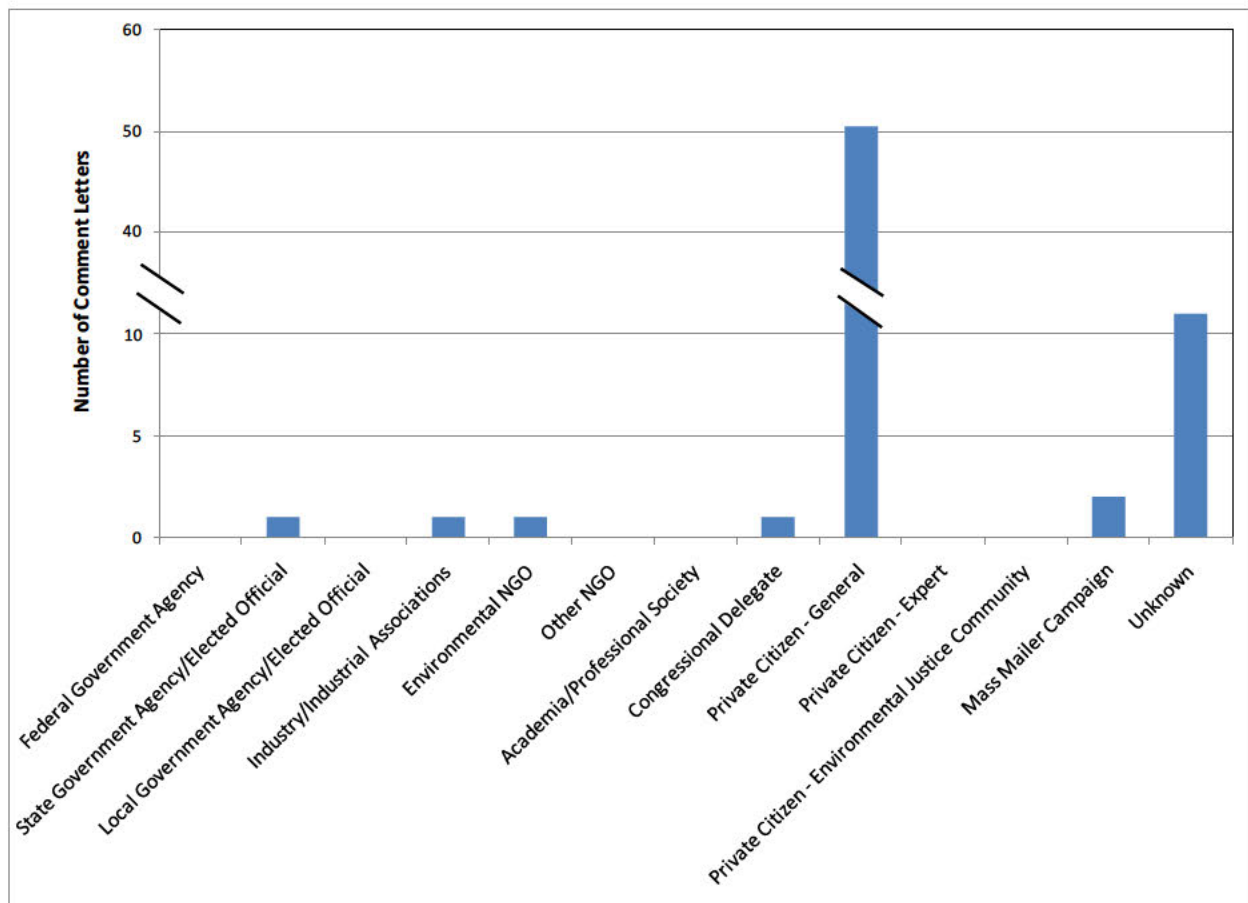


Figure 6-1. Clean Water Act Section 404, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the CWA Section 404 had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations, specifically on the roles of federal agencies in evaluating Section 404 applications.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

The Kentucky Energy and Environment Cabinet seeks confirmation of whether a Section 404 permit may be issued if a surface coal mining operation “complies with the suggested alternative mining practices in this guidance,” and whether “such alternative mining practices will sufficiently mitigate for a reasonable potential to violate for the parameters identified at the bottom of page 22 for a CWA § 402 permit” (p. 5). Seeking further clarification on the roles of federal agencies, Kentucky inquires as to whether the Corps may issue a CWA § 404 permit “in advance of issuance of a CWA § 402 permit” (p. 5).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, no comments from this category group discussing the issue area of Section 404 of the CWA had been posted by the docket. Any comments received subsequently will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. In general, the comments do not support the Guidance. Their CWA Section 404 comments focus

on the roles of government agencies, independent evaluations of water quality under CWA Section 404, sequencing of valley fills, and monitoring and reporting requirements.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

Frost Brown Todd imply that EPA is overstepping its legal and regulatory boundaries under the 404(b)(1) program: “EPA has clearly directed its regional offices to enforce these requirements, which are set forth in detail in the Guidance, through various means, including objecting to proposed NPDES permits; ignoring state water quality certifications under Section 401 of the CWA; and forcing state and federal agencies to ‘correct’ NPDES permit deficiencies through other permitting programs, such as the U.S. Army Corps of Engineers' ("Corps") program under CWA Section 404” (p. 3).

They further contend that the Guidance “ignores the careful federal-state balance established by Congress, and imposes numerous requirements on coal mining permitting that are not authorized under the Clean Water Act and related statutes” (p. 4). Frost Brown Todd finally conclude on this subject with the following statement. “These heavy-handed requirements not only contradict the long-established regulatory standards, authorities, and programs under the CWA, SMCRA, and related statutes – they threaten to establish precedents that would undermine the consistent and fair application of those statutes to activities and industries throughout the United States.”

b. Independent Evaluation of Water Quality under CWA 404

Frost Brown Todd also assert that the Guidance “effectively precludes the use of whole effluent testing ("WET") and/or best management practices, as allowed under 40 CFR § 122.44, to implement narrative water quality standards,” and that the EPA has effectively done so “without notice and comment or appropriate regulatory action” (p. 5).

c. Mine Design with Respect to Sequencing Valley Fills

Referencing the so-called Hobet 45 mine case, Frost Brown Todd argue that the Guidance is reflective of the outcome of that specific case, qualified as “one of the first permits to be addressed through the so-called Enhanced Coordination Procedures adopted by EPA and the Corps in mid-2009” (p. 3). They further imply that the outcome of the negotiations between the EPA, the Corps, and Hobet Mining, LLC, is not necessarily applicable to all surface coal mining operations.

“This includes the imposition of strict conductivity limits that may not be attainable, dramatic reductions in the percentage of coal to be recovered, requirements for mitigation monitoring and ‘adaptive management plans,’ and significant revisions to valley fill design. These measures were clearly the ‘price to be paid’ in order to eliminate EPA's objections to the permits required for the Hobet 45 mine, and EPA has made it patently clear in the April 1 Guidance Memorandum and all of its recent actions that it intends to make these measures mandatory for all future mine permits in Central Appalachia” (p. 3).

f. Monitoring and Reporting Requirements

Echoing the opinion expressed above, Frost Brown Todd further assert that the Guidance imposes unnecessary and costly monitoring requirements for permittees.

“to include provisions for ‘adaptive remedial action’ [that] threatens to require every permittee to write an open-ended blank check for further, unlimited mitigation demands by EPA and other resource agencies – without any clear standards or expectations in advance. This threatens to force permittees to attempt to hit constantly moving targets for mitigation and to impose economically impracticable and technically unachievable mitigation requirements on them in perpetuity” (p. 8)

They argue that these monitoring requirements are “arbitrary and capricious and well beyond EPA’s statutory authority,” and contend that “EPA and other permitting agencies must provide clear, predictable, and attainable standards in advance” (p. 8).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of the CWA Section 404. Overall, the Sierra Club (Doc. #0225) is supportive of the Guidance, yet encourages the implementation of additional measures to protect the environment from the “environmentally destructive activities taking place” in Appalachia (p. 1). Sierra Club comments upon the sequencing of valley fills and the ability of mitigation measures imposed under Section 404 to mitigate for water quality impacts, and provides recommendations for changes to the Guidance relating to Section 404 of the CWA.

c. Mine Design with Respect to Sequencing Valley Fills

While generally supportive of the Guidance, Sierra Club disagrees “with the policy of sequencing approval of valley fills” (p. 2). Citing that valley fills “cause irreparable damage to streams,” the commenter notes that “high conductivity levels cause the loss of streams’ ecological services” (p. 2) as demonstrated by the scientific information on which EPA’s Guidance is based. The commenter goes on to remind the EPA and the Corps of their “responsibility to prevent water pollution, not simply monitor it after it occurs” (p. 2).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

The Sierra Club disagrees with compensatory mitigation by asserting that “Mitigating for the loss of headwater streams should not be permitted because it is not possible to re-create the ecological functions of these streams.” The Sierra Club also wishes for EPA to “recognize that mitigation for these streams is not a viable option” (p. 2).

h. Recommended Changes in Guidance Relating to CWA 404

Sierra Club commends EPA for issuing the Guidance, but urges EPA to further strengthen its requirements with respect to Guidance implementation under the CWA Section 404. “While Sierra Club supports the guidance as an important initial step, we believe that EPA must strengthen it in several aspects” (p. 2). Sierra Club concludes with the statements, “We urge EPA to ensure that the guidance is faithfully carried out in its regional offices and in the Appalachian states. In addition, we ask EPA to strengthen the guidance by recognizing the failure of stream mitigation effort and to abandon its policy of sequencing valley fills” (p. 2).

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOS)

As of December 1, 2010, no comments from this category group discussing the issue area of Section 404 of the CWA had been posted by the docket. Any comments received subsequently will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the CWA Section 404 had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter (Doc. #0011) submitted by congressional delegates discusses Section 404 of the CWA. The letter is signed by three members of Congress representing the States of Virginia and West Virginia, is in general disagreement with the Guidance, and expresses concerns on many of its aspects.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

The congressional delegates focus their comments on the Guidance around the “far-reaching implications of the policies it espouses” (p. 1). Specific to the roles of federal agencies in evaluating CWA 404 applications, they assert that “Essentially, EPA is seeking to bootstrap conductivity as a section 402 effluent limitation standard through the section 404 process ... [and] only in Appalachia, and only with respect to surface coal mining operations” (p. 1). The commenters contend that “not only is there no precedent for such an action, but [that] it is also patently a wrong approach to implementing the Clean Water Act.”

The congressional delegates conclude by urging EPA to withdraw the Guidance and to “continue to work with the affected States, the involved federal agencies, and all stakeholders to develop guidelines that truly provide a balanced process for energy development and environmental protection” (p. 2).

9. PRIVATE CITIZEN – GENERAL

Fifty-one comment letters posted by the docket as of December 1, 2010, from members of the general public commented on the issue area of the CWA Section 404. Several identical comments are expressed by many of the commenters, and many of these comment letters appear to be modified versions of the mass mailing campaigns (e.g., Doc. #0022 from Earthjustice, and Doc. # 0103 from Sierra Club).

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

Many of the private citizen letters comment upon the roles of federal agencies in evaluating CWA 404 applications, with most expressing gratitude that the Guidance will strengthen this process and “ensure that regional staff will finally following Clean Water Act Requirements calling for an end to one of the devastating impacts of mountaintop removal coal mining” (e.g., Doc. # 0179). Others are thankful that “EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia” (e.g., Doc. # 0180), and that “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued” (e.g., Doc. # 0222.1)

One commenter (Doc. #0053) summarizes the general sentiment by writing: “I urge the EPA to apply the Clean Water Act to permit applications for mountain top removal mines. I understand that this type of mining has continued despite its violation of law due to carious waivers and loopholes based on false information. I urge the EPA to base their decisions in fact and enforce laws passed to protect air and water quality”.

c. Mine Design and Sequencing of Valley Fills

More than half of the private citizen commenters express concern over the practice of sequencing valley fills, imploring that “EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills” (e.g., Doc. # 0032).

One Tennessee resident (Doc. #0074, p. 1) expresses the strong opinion that: “there is no mitigation value or other benefit to any policy of ‘sequencing’ valley fills. Such a policy would only lengthen the period of time over which the same absolute ecological genocide occurs. There is, to date, no actual restoration of Appalachian forest following the removal of its topsoil yet demonstrated, let alone practiced by mining companies. Without such restoration, ‘sequencing’ would only delay the inevitable destruction. Environmental laws are meant to prevent ecological destruction, not merely delay it.”

c. Mine Design and Material Handling and Upland Disposal

Among the commenters who discuss the material handling and upland disposal of sediments, most focus upon valley fills, and express skepticism of the practice. For instance, one commenter writes: “Scientific research suggests that one valley fill is too many, because the

unique headwater streams filled are lost forever, along with all of the ecological services they provide to the ecosystem. On top of that, every valley fill becomes a source of pollution that contaminates the watershed downstream” (Doc. #0222.1, p. 3).

Another commenter states that “Scientific research suggests that one valley fill is too many, because the unique headwater streams filled are lost forever, along with all of the ecological services they provide. On top of that, every valley fill becomes a source of pollution that contaminates the watershed downstream” (Doc. #0245).

d. Relationship of Water Quality to Significant Degradation under 230.10(c)

Several comments (sometimes with identical sections) express that “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued” and that “After-the-fact monitoring is not a legal or effective substitute for preventing significant harm and loss of waters in the first place” (e.g., Doc. #0222.1, p. 3).

A Tennessee resident expresses a slightly different, and more strongly worded opinion (Doc. #0074): “This outrage will stop when EPA enforces the Clean Water Act and other environmental laws as they were intended. ‘Undue degradation’ of waterways necessarily includes their complete obliteration, and the latter is therefore illegal. The Corps of Engineers’ determination in 2002 that the complete burial of streams could constitute ‘fill,’ permissible under the CWA, was driven by political directives from the former administration, not science or a plain reading of the law. The EPA must not further indulge this violence to environmental law and the resulting violence to the Appalachians.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

More than half of the private citizen letters discuss the suitability of stream creation as compensatory mitigation under Section 404, with many expressing the identical comment that “there is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams” (e.g., Doc. #0032).

Several commenters also make the identical statement that: “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams. Similarly, EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. #0088).

One commenter furthers the general opinion expressed by many by stating: “The proposed guidance policy is only a first step toward compliance with the Clean Water Act. In particular, there is no scientific evidence that ‘stream creation’ is a sufficient means of mitigation, as no replication of an intact, functioning Appalachian forest stream has ever been attained” (Doc. #0074, p. 1).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

Only a small handful of commenters from the private citizen – general category reference the ability of proposed mitigation under CWA 404 to compensate for water quality impacts, primarily referring indirectly to this sub-issue by referencing the ecological functions of streams. They state that “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams” (Doc. #s 0217, 0218, and 0219). Another commenter (Doc. #0254) points out that “stream creation does not mitigate for stream loss, especially for headwater streams.”

f. Monitoring and Reporting Requirements

The docket contains several letters from private citizens commenting on the monitoring and reporting requirements, although only in passing. These commenters make the identical statement that “After-the-fact monitoring is not a legal or effective substitute for preventing significant harm and loss of waters in the first place” (e.g., Doc. #0222.1, p. 3).

g. Cumulative Impact Analysis under CWA 404

Several letters from private citizens address the concept of cumulative impacts under Section 404 of the CWA, commenting that “EPA also deserves credit for finally recognizing in the policy that the Clean Water Act does not permit the massive, cumulative impacts that result from mountaintop removal mining. Appalachia cannot afford to continue to bury its streams and pollute entire watersheds” (Doc. #s 0088, 0089, 0090, 0091, and 0222.1, p. 2).

h. Recommended Changes in Guidance Relating to CWA 404

Most private citizen comments provide recommendations to EPA that they feel will strengthen the environmental protections of the Guidance. A quote found repeatedly among this commenter category is as follows: “Finally, EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams. Similarly, EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. 0213.1).

The opinion expressed by many of the general private citizen letters is that “the proposed guidance policy is only a first step toward compliance with the Clean Water Act,” (Doc. # 0074), recommending that EPA strengthen its Guidance document by reconsidering several aspects of the Guidance. These aspects include the practice of sequencing valley fills and relying upon stream creation as suitable mitigation for impacts under CWA 404. One commenter (Doc. #0230) is particularly adamant regarding valley fills stating that “Valley fills should be completely banned anywhere in the USA forever!”

Several commenters (Doc. #s 0244, 0245, and 0253) cite that “More than 2,000 miles of streams have already been destroyed, and we cannot afford to lose more, especially unique and vital headwater streams. Because of this, I strongly urge the EPA to strengthen this guidance.”

One letter recommends the use of rule-making: “The EPA now must further increase protections for streams and communities. Please use rule-making to make stream protections permanent” (Doc. #0264), a recommendation echoed by other commenters.

Doc. #0088 calls for “a change to business as usual that places private profit above public resources by upholding the Clean Water Act in the mining practice in Appalachia and live up to the name The Environmental Protection Agency.” Another comment (Doc. #0075) simply states: “NO MORE MOUNTAIN REMOVAL MINING”.

A West Virginia commenter (Doc. #0251) implores: “Please don’t back down on the rules you have started to create; move forward with confidence and courage knowing that the vast majority of Americans are rooting for you to curb the out-of-control greed and rapacious practices of what we call BIG COAL.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted by a private citizen - expert commenting the CWA Section 404. The commenter is a biologist with a Masters degree in biology and more than 30 years in the Appalachian region public school system, and is currently teaching wildlife management and environmental earth science (Doc. #0112). The comment echoes most of the Earthjustice mass mailing campaign (Doc. #0022), with some personal insight to his experience living in this region. He comments upon the sequencing of valley fills and the suitability of stream creation to provide compensatory mitigation under Section 404 of the CWA, and provides recommended changes in the Guidance relating to CWA Section 404.

c. Mine Design and Sequencing of Valley Fills

As with others who are against the practice of sequencing valley fills, the commenter expresses that “EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The comment letter, inclusive of content from the Earthjustice mass mailing campaign repeats the statement that “There is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams.”

h. Recommended Changes in Guidance Relating to CWA 404

As with many other supporters of the Guidance, the commenter supports EPA in its efforts to finalize the Guidance with even further environmental protections. “After years of neglect by

EPA, Appalachia deserves better than another failed experiment that allows for the damage to start before the impact of the permit is appropriately assessed, in permits that put a local community in limbo while decisions about the future of their waters get made behind closed doors” (p. 2).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, no comments from this category group discussing the issue area of the CWA Section 404 had been posted by the docket. Any subsequent comments received from this commenter category will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and focus on the sequencing of valley fills, the suitability of stream creation, and the ability of mitigation to compensate for impacts to water quality. Both mass mailing letters advocate for strengthening the Guidance.

c. Mine Design and Sequencing Valley Fills

Despite overall agreement with the issuance of the Guidance, neither mass mailing campaign supports the practice of sequencing valley fills. “Additionally, EPA must also not establish a policy of sequencing its approval of valley fills, because there is no scientific evidence that sequential construction of valley fills avoids the devastating long-term and downstream pollution caused by valley fills.” This sentiment is echoed by the Sierra Club mass mailing campaign.

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The Earthjustice campaign comments generally on the ability of stream creation to provide suitable mitigation under the CWA by stating, “There is no scientific evidence to support claims of ‘stream creation,’ and it is never a viable option to mitigate for stream loss, especially for headwater streams.” The Sierra Club campaign furthers this reaction by stating that “...EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams.”

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

While not commenting directly on the ability of the mitigation practices to compensate for water quality impacts, the Earthjustice supporters urge EPA to carefully assess the impact of a permit before it is issued, stating “both EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued.”

h. Recommended Changes in Guidance Relating to CWA 404

The Earthjustice campaign concludes with a plea for EPA to further the environmental protections within the Guidance: “Finally, I strongly urge you, Administrator Jackson, to strengthen this guidance.” Sierra Club supporters echo this sentiment.

13. UNKNOWN

Eleven letters from unknown or anonymous sources comment on the CWA Section 404. All comments support the Guidance. These letters comment upon aspects of Section 404 of the CWA, the roles of federal agencies, sequencing of valley fills, the relationship of water quality to significant degradation, the suitability of stream creation as mitigation, the ability of mitigation to compensate for water quality impacts, and cumulative impacts. About half of these comment letters also provide recommended changes, mostly related to strengthening the Guidance.

a. Federal Roles of EPA, Corps, and OSM in Evaluating CWA 404 Applications

One commenter (Doc. #0216) expressed gratitude that “EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia. The streams in coal country must not be destroyed by mining impacts.”

c. Mine Design and Sequencing Valley Fills

Most letters from unknown sources disapprove of the practice of sequencing valley fills, “as there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters” (e.g., Doc. #0187) and that “scientific research suggests that one valley fill is one too many, because the unique headwater streams filled are lost forever, along with all of the ecological services they provide to the ecosystem” (e.g., Doc. # 0209).

d. Relationship of Water Quality to Significant Degradation under 230.10(c)

Two of the unidentified commenters (Doc. #s 0185 and 0214.1) reference the relationship of water quality to significant degradation, noting that “the EPA and the Army Corps have the duty up front to prevent significant degradation of waters from happening before any permit is issued.”

e. Compensatory Mitigation under CWA 404 and Suitability of Stream Creation

The majority of the commenters from this category remark on the suitability of stream creation, by stating that “Science shows that current mitigation strategies are ineffective and that we can not replace buried streams. This needs to be recognized as part of permitting process” (Doc. #0183). Many expressed the identical sentiment that “EPA should strengthen the policy by refusing to permit mitigation as an option for the loss of streams because it is not possible to re-create the ecological functions of streams” (e.g., Doc. #0210).

e. Compensatory Mitigation under CWA 404 and the Ability of Mitigation to Compensate for Water Quality Impacts

A few commenters from this category make a passing reference to the ability of mitigation to compensate for water quality impacts, most of them expressing skepticism. One commenter advises EPA to “recognize that current mitigation strategies do not work” (Doc. #0183), while another “oppose[s] the use of permit mitigation for damage created by surface mining. Once the damage occurs it is irreparable. No amount of mitigation can off-set this type of injury to our land, water, and citizens” (Doc. #0226).

h. Recommended Changes in Guidance Relating to CWA 404

About half of the comment letters provide recommendations for changes to the Guidance relating to Section 404 of the CWA, with many encouraging EPA to strengthen the guidance “by refusing to permit mitigation as an option for the loss of streams” (Doc. #s 0187, 0209, and 0211). “EPA must further increase protections for our streams and our communities; too many streams have been lost, and no more valley fills should be permitted. While these initial steps are important, stream protections must be made more permanent via rule-making” (Doc. #s 0184 and 0214.1).

Multiple commenters also express appreciation for “EPA’s commitment to finally enforce the Clean Water Act to protect Appalachia,” and encourage EPA to “Finalize your guidance to improve review of Appalachian surface coal mining (Doc. #s 0209 and 0216).

V. NPDES Oversight and Review

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of NPDES oversight and review includes those comments, recommendations, and opinions submitted by stakeholders regarding the following sub-issues:

- a. Federal authority to regulate these activities under 402;
- b. Application of reasonable potential analysis;
- c. Incorporation of numeric standards in NPDES permit;
- d. Monitoring and reporting requirements;
- e. Compliance schedules;
- f. Narrative standards;
- g. Antidegradation; and
- h. Recommended changes in guidance relating to CWA 402.

There were a total of 34 tallied comments submitted to the docket as of December 1, 2010, discussing NPDES oversight and review. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 5-1 on the next page presents the total comment letters that address the issue of NPDES oversight and review, by commenter category.

All comments received from private citizens and the mass mailing campaigns either support the Guidance or are opposed to mountaintop mining activities in general, and recommend that water quality criteria for conductivity be set and adopted throughout Appalachia. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters view the Guidance as flawed in imposing new requirements on NPDES permits solely for mountaintop mining activities, and request that the Guidance be withdrawn. Congressional delegates disagree that EPA's emphasis on conductivity for NPDES permits

related to mountaintop activities. The Sierra Club urges EPA to set water quality criteria for conductivity throughout Appalachia and to encourage states to implement them. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, including data collection, water quality standards, baseline monitoring, and compliance schedules.

Below are summaries, presented by commenter category, on the issue of NPDES oversight and review. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

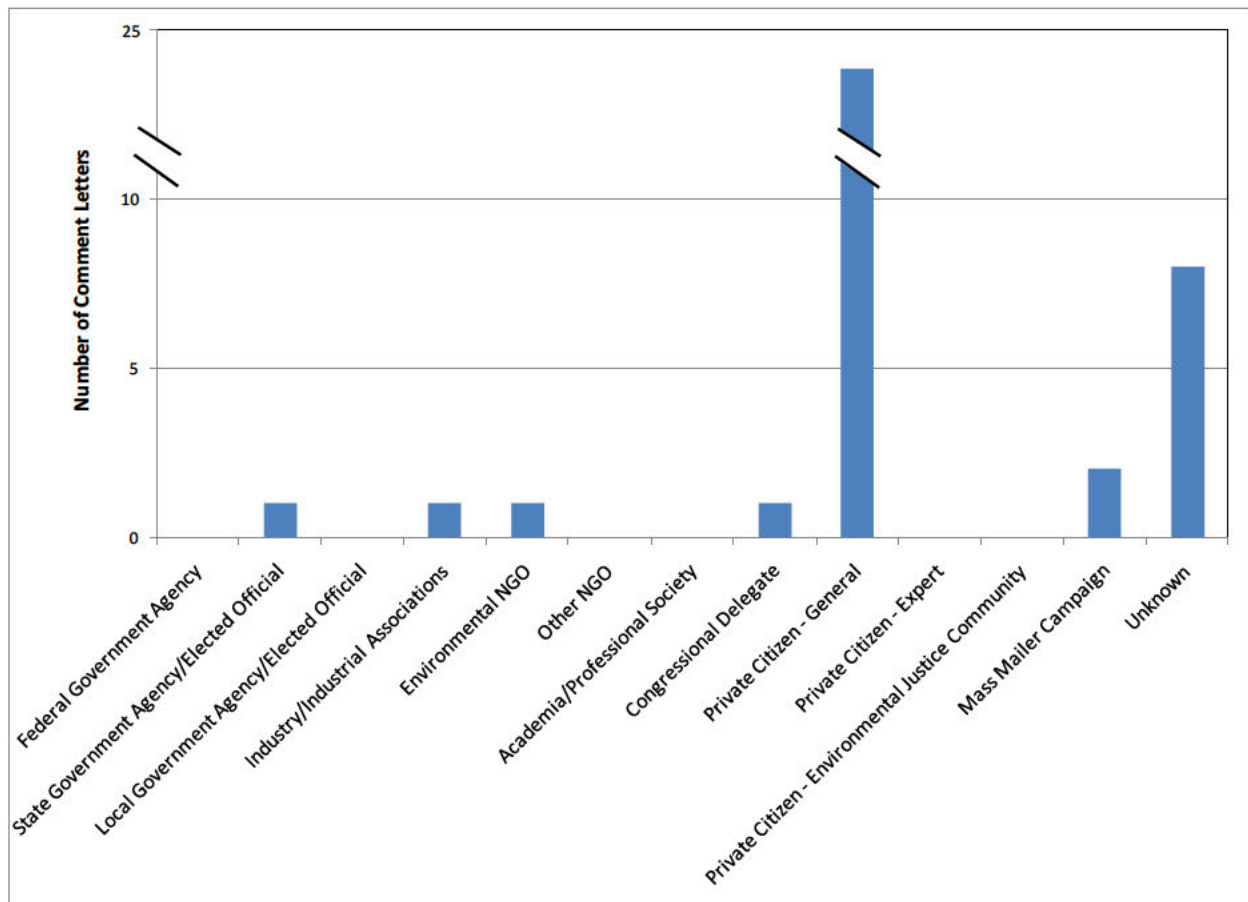


Figure 5-1. NPDES Oversight and Review, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

b. Application of Reasonable Potential Analysis

The Kentucky Energy and Environment Cabinet requests clarification regarding the issue of a permit conditional on the collection of data during the permit term, and the status of States not listed in the Guidance. Their questions are as follows:

- “Is it U.S. EPA’s determination that the issuance of a CWA § 402 permit may not be conditioned on collection of data during the permit term appropriate for performance of a reasonable potential analysis, with the requirement in the permit that it be re-opened or conditioned to include appropriate requirements once reasonable potential is determined?” (p. 4); and
- “Will States other than those specified in the Guidance also be “subject to reasonable potential analysis of non-coal mining activities?” (p. 5).

c. Incorporation of Numeric Standards in NPDES Permit

The Kentucky Energy and Environment Cabinet questions the relevance of numeric standards, and asks if other water quality standards (including narrative standards) could be used. Question 15 (p. 2) asks: “Is it U.S. EPA's determination that a delegated state cannot in some or all cases use the available approaches outlined in 40 CFR 122.44 for implementing a narrative water quality standard, including whole effluent testing (WET) or best management practices (BMPs) in lieu of a numeric limit for a narrative water quality standard?”

d. Monitoring and Reporting Requirements

The Guidance requires baseline monitoring data for biological condition, conductivity, total dissolved solids, sulfates, bicarbonate, chloride, magnesium, potassium, calcium, sodium, pH, and selenium. The commenter wonders if EPA is concerned with other parameters or if the concern is limited specifically to this list. The comment letter also asks (question 25, p.5): “What is U.S. EPA’s position as it relates to the use of water quality variances with respect to this new final interim guidance?”

e. Compliance Standards

The Kentucky Energy and Environment Cabinet questions EPA’s position on compliance schedules in the new Guidance.

f. Narrative Standards

The Guidance states that a top priority of the Administration is to reduce and minimize impacts of surface coal mining. The Kentucky Energy and Environment Cabinet requests an explanation of EPA's "perspective of reducing and minimizing impacts of surface coal mining as it relates to the goals and objectives of the CWA § 402 program (p. 4)." As stated above (under c. Incorporation of Numeric Standards in NPDES Permit), the Kentucky Energy and Environment Cabinet references 40 CFR 122.44 to recommend the use of narrative standards (question 15 p. 2).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

a. Federal Authority to Regulate These Activities Under 402

Frost Brown Todd claim the Guidance is a legally binding rule that has been adopted without public notice and comment, making it legally flawed, and request it be withdrawn immediately. They state "EPA has made clear its intent to impose specific new requirements on NPDES permits (and other related environmental permits) associated with surface mining activities in Appalachia, and to use its full authority and influence to compel the states and other federal agencies to enforce these requirements" (p. 3).

Frost Brown Todd is of the opinion that the permit requirements and environmental standards have not been subject to a full scientific review and feel the Guidance was issued prematurely. For example, the Guidance does not allow coal mining activities to be authorized under the NPDES general permit. Frost Brown Todd argues that EPA has not provided enough information to justify this requirement. They further claim EPA "improperly seeks to 'correct'

NPDES permits that have already been issued by states by seeking to force the Corps to address those alleged deficiencies through the Section 404 permitting program” (p. 5).

c. Incorporation of Numeric Standards in NPDES Permit

The Guidance sets a specific, numeric standard for states to enforce through the NPDES permitting process and requires specific documentation to support NPDES permitting decisions. Frost Brown Todd again make the argument that the Guidance is legally flawed and request it be withdrawn.

f. Narrative Standards

Frost Brown Todd disagrees with the Guidance’s position on narrative standards and contend that “the Guidance effectively precludes the use of whole effluent testing (“WET”) and/or best management practices, as allowed under 40 CFR § 122.44, to implement narrative water quality standards. Through this approach, EPA has effectively written these methods out of the regulation without notice and comment or appropriate regulatory action” (p. 5).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of NPDES oversight and review. The Sierra Club (Doc. #0225) strongly supports the Guidance and commends EPA for issuing it.

c. Incorporation of Numeric Standards in NPDES Permit

The Sierra Club feels the Guidance is necessary to protect water quality from negative impacts of mountaintop removal mining. They further urge EPA to “set water quality criteria for conductivity for central Appalachia and require states to adopt these criteria as soon as possible (p. 1).” Given the number of pending mining permits, they agree with EPA’s immediate implementation of the Guidance.

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter (Doc. #0011) posted by the docket as of December 1, 2010 was submitted by congressional delegates. It is signed by three members of Congress representing the States of Virginia and West Virginia, and is in general disagreement with the Guidance and federal authority to regulate mountaintop mining activities under 402.

a. Federal Authority to Regulate These Activities Under 402

The members of Congress are in general disagreement with the Guidance and are of the opinion that “EPA is seeking to bootstrap conductivity as a section 402 effluent limitation standard through the section 404 process” (p. 1) for surface coal mining in Appalachia. They argue there is no precedent to justify this action and it is a “wrong approach to implementing the Clean Water Act. This is a national law and should be applied evenly and equally throughout the country as has been done in the past, and there is simply no justification for departing from that practice” (p. 1).

9. PRIVATE CITIZEN - GENERAL

Twenty three comment letters, typically one page in length, submitted by members of the general public comment on the issue of NPDES oversight and review. All of the private citizen commenters either support the Guidance or are opposed to mountaintop mining in general.

a. Federal Authority to Regulate These Activities Under 402

Commenters support EPA’s decision to implement the Guidance immediately. One commenter (Doc. # 0222.1) states: “I also strongly encourage the EPA to promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion” (p. 2).

c. Incorporation of Numeric Standards in NPDES Permit

Most commenters express concern with the impacts of mining to water quality. Many feel EPA should set water quality criteria for conductivity for Central Appalachia and require these standards be adopted by states as soon as possible.

h. Recommended Changes in Guidance Relating to CWA 402

As stated above, the majority of commenters are concerned with the impacts of mining to water quality. Many feel EPA should set water quality criteria for conductivity for Central Appalachia and require these standards be adopted by states as soon as possible. Several commenters further suggest that EPA “prohibit issuance of permits that are contrary to the guidance (Doc. #0215).”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted from a private citizen - expert commenting on the issue of NPDES oversight and review. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science (Doc. #0112).

c. Incorporation of Numeric Standards in NPDES Permit

The commenter shares concern for water quality with commenters from several other commenter categories and reiterates the request for EPA to “follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia” (p. 2).

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of NPDES oversight and review had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized.

c. Incorporation of Numeric Standards in NPDES Permit

Both campaigns share concern for water quality with commenters from several other commenter categories and reiterate the request for EPA to “follow up the policy by setting water quality criteria for conductivity for central Appalachia and require states to adopt these criteria as soon as possible (Doc. #0103).”

13. UNKNOWN

Eight comment letters received from unknown or unidentified commenters discuss NPDES oversight and review. All commenters are in general agreement with EPA’s Guidance.

c. Incorporation of Numeric Standards in NPDES Permit

The majority of commenters “strongly encourage EPA to promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion (Doc. #0214.1, p. 1).”

h. Recommended Changes in Guidance Relating to CWA 402

Many commenters appreciate EPA’s commitment to protect Appalachia by enforcing the CWA and urge EPA to “strengthen and finalize your guidance to improve review of Appalachian surface coal mining (Doc. #0192).”

IV. Conductivity

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of conductivity includes those comments, recommendations, and opinions submitted by stakeholders regarding the suitability of specific conductance as a benchmark, the use of constituent ions instead of conductivity, and the use of pollutants other than conductivity or constituent ions as a benchmark for water quality.

There were a total of 35 tallied comments submitted to the docket as of December 1, 2010, discussing conductivity. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 4-1 on the next page presents the total comment letters that address conductivity issue by commenter category.

Most comments from private citizens and mass mailing campaigns are in general agreement with the Guidance and support the use of conductivity as a benchmark. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, arguing that specific conductance is not an adequate benchmark for water quality downstream of mountaintop mining activities, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. The Sierra Club argues that scientific research has demonstrated that mountaintop mining activities are responsible for downstream high levels of conductivity because these cannot be attributed to residential development or agriculture, and recommends a stricter conductivity benchmark. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which are related to water quality measures and benchmarks.

Below are summaries, presented by commenter category, on the issue of conductivity as it relates to the Guidance. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

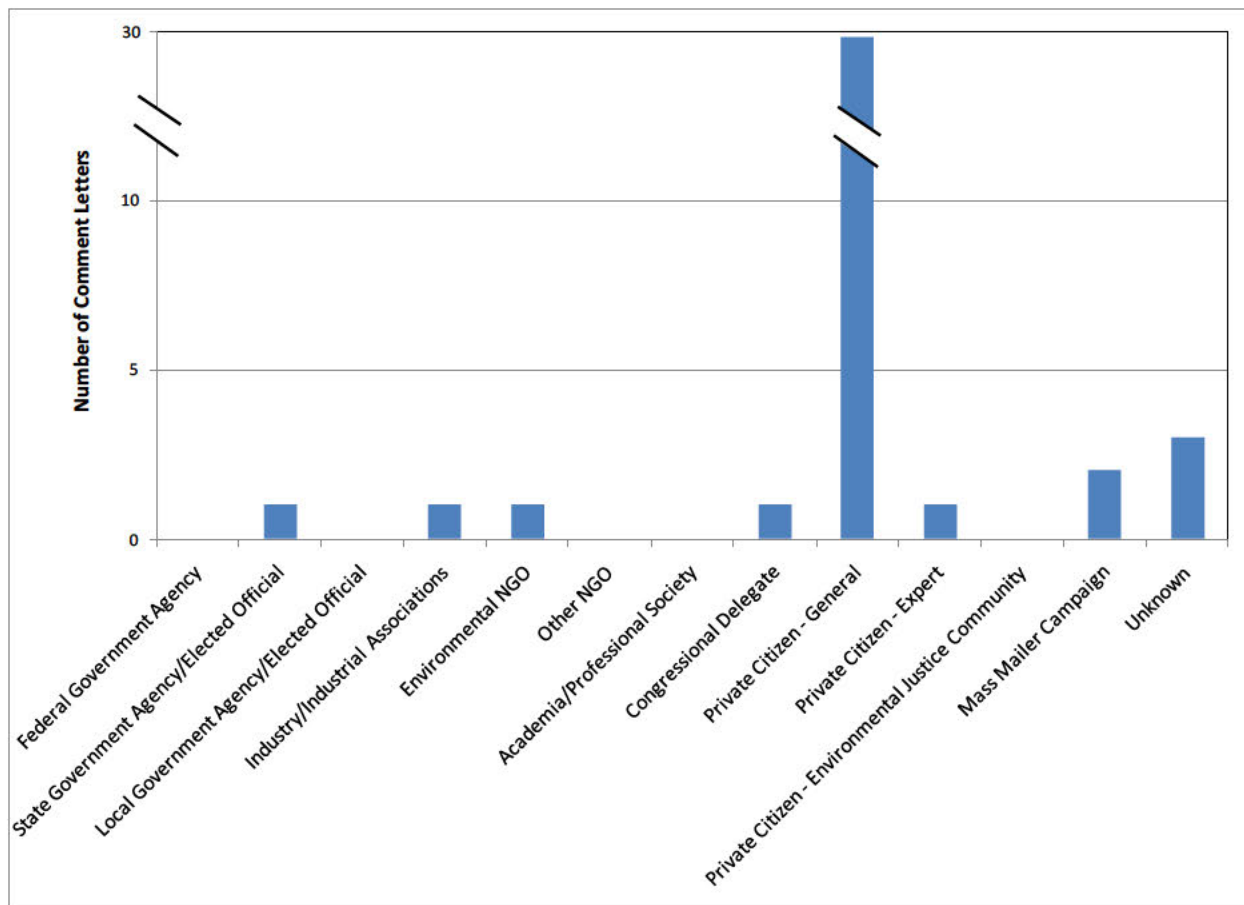


Figure 4-1. Conductivity, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations. Some of their questions relate to the Guidance's proposed water quality benchmarks.

b. Use of Constituent Ions Instead of Conductivity

The Kentucky Energy and Environment Cabinet refers to footnote 21 in the Guidance and a study "that narrows the applicability of this guidance to waters dominated by salts of SO_4^{2-} and

HCO₃⁻ at circum-neutral pH and low levels of chloride (q. A.16)” to request that EPA describe how this determination will be made when processing CWA Section 402 permits. They further ask “what delegated states should do when waters are not so dominated (q. A.16).”

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance, and to conductivity measures that they feel cannot be upheld.

a. Suitability of Specific Conductance as a Benchmark

With respect to conductivity, Frost Brown Todd states that the Guidance “includes the impositions of strict conductivity limits that may not be attainable” (p. 3).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted by an environmental NGO commenting on the issue of conductivity in EPA’s Guidance. The Sierra Club (Doc. #0225) strongly supports the Guidance, commends EPA for issuing it, and supports the suitability of conductivity as a benchmark for water quality.

a. Suitability of Specific Conductance as a Benchmark

The Sierra Club argues that ample scientific research has demonstrated that high levels of conductance are seen downstream of mountaintop removal mines in Appalachia. They also argue that EPA’s research has shown that other sources, such as soil disturbances from residential development and agriculture are not responsible for high conductance levels. They therefore make the point that the use of specific conductance is a suitable benchmark for determining water quality.

They are requesting the implementation of a higher conductivity benchmark in the Guidance “to prevent damage to headwater streams as well as the larger, downstream aquatic system” (p. 2). Furthermore, they reference the peer review conducted by the Science Advisory Board that confirms the validity of the conductivity study and the numeric benchmark and argue that the “levels that EPA identified for the benchmark may not be sufficiently protective of water quality” (p. 2).

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One comment letter received from congressional delegates (Doc. #0011) addresses conductivity. The letter is signed by three Congressional Delegates representing the States of Virginia and West Virginia. It is in general disagreement with the Guidance and the use of conductivity as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

The congressional delegates argue that the Guidance is “premature largely” and contend that full consideration has not been given to the “far-reaching implications of the policies it espouses, especially as it relates to conductivity” (p. 1).

9. PRIVATE CITIZEN - GENERAL

Twenty four comment letters, typically one page in length, received from members of the general public comment on conductivity. All letters are in agreement with the Guidance and the suitability of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

Commenters argue that specific conductance is suitable as a benchmark, with all letters except one (Doc. #0006) stating at least one of the following three reasons:

- “Because conductivity is elevated downstream from mountaintop removal mines;”

- “Best available science has shown that stream conductivity level is a reliable indicator of stream health and function;” or
- “Based on the research showing a strong relationship between conductivity of at least 300 – 500 $\mu\text{S}/\text{cm}$ and harm to aquatic life.”

About half of all the commenters encouraged EPA to “promptly follow the science discussed in this guidance by setting a National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion.” It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022)

One commenter (Doc. #0006) applauds and supports the new conductance tests for streams and “supports the limits of conductance, on dissolved solids and small particulates” (p. 1).

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter submitted by a private citizen - expert comments on conductivity. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching Wildlife Management and Environmental Earth Science (Doc. #0112). The commenter strongly supports the Guidance and of the use of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

This commenter is in support of specific conductance suitability as a benchmark and further states that “available science shows that stream’s conductivity level is a reliable indicator of stream health and function” and that “best available science shows a strong relationship between conductivity of at least 300 – 500 $\mu\text{S}/\text{cm}$ and harm to aquatic life.”

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of conductivity had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA's Guidance, and of the use of specific conductance as a benchmark.

a. Suitability of Specific Conductance as a Benchmark

Both Earthjustice and the Sierra Club support the suitability of specific conductance as a benchmark. They argue that research has shown a strong correlation between conductivity levels exceeding 300 – 500 $\mu\text{S}/\text{cm}$ and “harm to aquatic life.” The Sierra Club (Doc. #0103) further recommends that EPA “follow up the policy by setting water quality criteria for conductivity for central Appalachia and requires states to adopt these criteria as soon as possible.”

13. UNKNOWN

Three comment letters received from unknown or unidentified commenters discuss conductivity. They are all in support of the guidance.

a. Suitability of Specific Conductance as a Benchmark

Similar to the mass mailing campaign sponsored by Earthjustice, two comment letters (Doc. #0184 and #0214) support the suitability of specific conductance as a benchmark because “conductivity is elevated downstream from mountaintop removal mines.”

Similar to the other mass mailing campaign sponsored by The Sierra Club, two comment letters (Doc. #0185 and #0214) encourage EPA to set a “National Recommended Water Quality Criterion for conductivity for Central Appalachia and requiring states to adopt the criterion.”

III. Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia issue includes those comments, recommendations, and opinions submitted from stakeholders regarding the scientific validity of material referenced in the Guidance, scientific materials not reviewed or referenced in the Guidance, the suitability of ecoregion use in the Guidance, scientific and technical recommendations for project review and monitoring, and the issue of insufficient scientific evidence or peer review in the Guidance.

There were a total of 45 tallied comments submitted to and posted by the docket as of December 1, 2010, discussing the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. These were submitted by different types of commenters, including a State agency, representatives of the mining industry, Congressional Delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 3-1 on the next page presents the total comment letters posted to the docket as of December 1, 2010, that addressed the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia issue by commenter category.

Most comments from private citizens and mass mailing campaigns support the validity of the scientific material referenced in the Guidance, and some argue for additional scientific research to further develop an understanding of the adverse impacts of valley fills. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) is in general support of the Guidance. Congressional delegates and industry comments focus on the aspect of scientific peer review with regard to the issuance of the Guidance, generally stating that there was not sufficient scientific peer review in the process, and thereby challenging the overall validity of the Guidance. The Commonwealth of Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions regarding the scientific validity of reports referenced in the Guidance, and whether there is sufficient scientific

evidence to support the Guidance, particularly requesting scientific evidence related to Kentucky.

Below are summaries, by commenter category, on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. Under each commenter category all sub-issues commented on are listed by letter (based on the issue outline) and discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

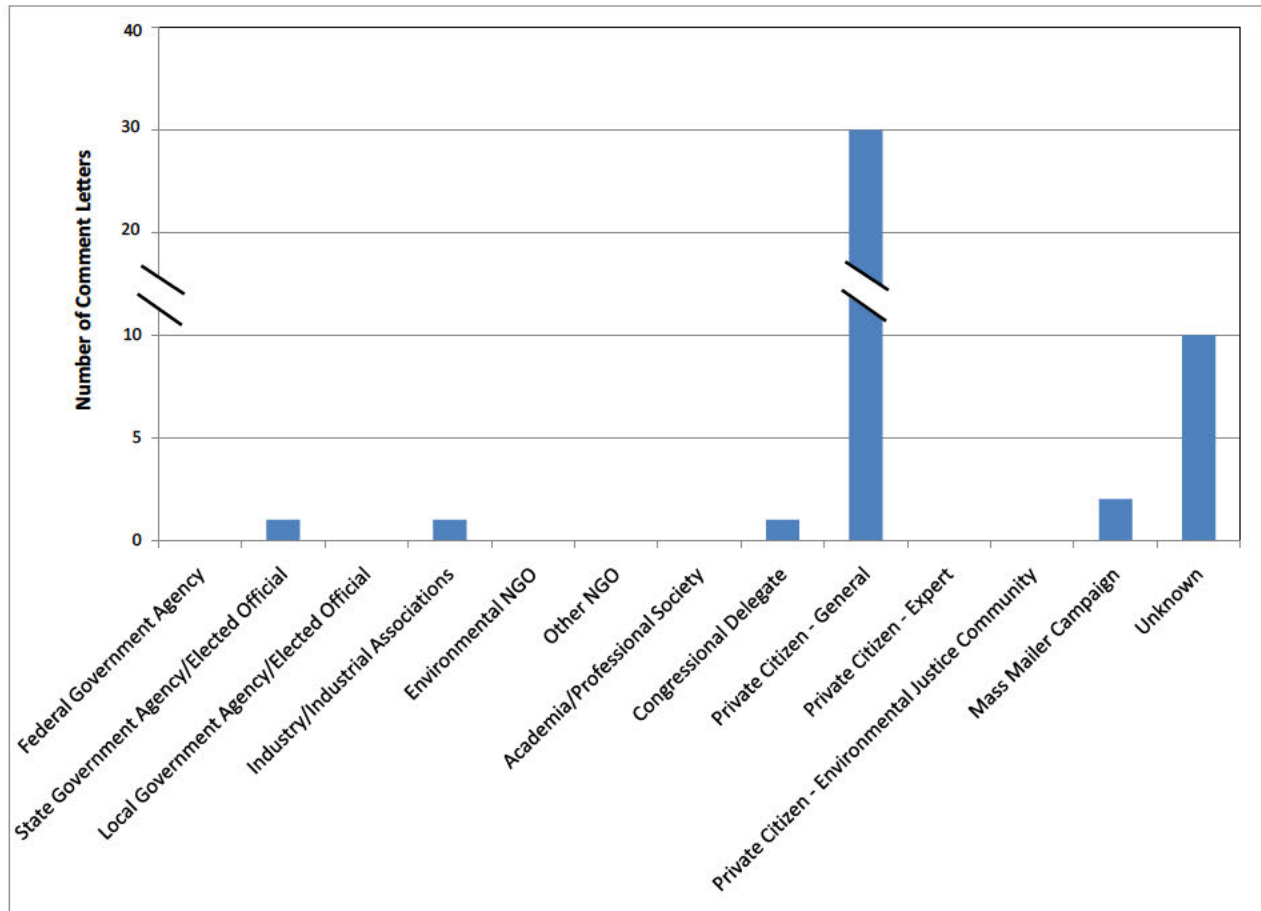


Figure 3-1. Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Commonwealth of Kentucky Energy and Environment Cabinet (Doc. #0012) was the only comment received from a state government agency or elected official commenting on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. The agency appears to be generally in support of the Guidance, but questions the scientific validity of reports referenced in the Guidance, and whether there is sufficient scientific evidence to support the Guidance. In particular the agency expresses interest in receiving documentation of scientific studies performed in Kentucky, as well as more details on its implementation: “I request that these inquiries be responded to expeditiously in writing given the CWA § 402 surface coal mining permit applications pending before the Commonwealth, and those that we continue to receive daily” (p. 1).

a. Scientific Validity of Material Referenced in Guidance

The Kentucky Energy and Environment Cabinet poses the following questions regarding the issue of Scientific Validity of Material Referenced in the Guidance:

- “10. At the top of page 3 [of the Guidance] it is stated that impairments related to surface coal mining have been ‘linked to contamination of surface water supplies and resulting health concerns.’ Does U.S. EPA have documentation and data specific to Kentucky that supports this statement? If so, what is that documentation and data?” (p. 3); and
- “23. In the middle of page 30, the guidance makes the statement that ‘it is EPA’s experience that projects that involve more than one mile of stream loss or more than one valley fill are likely to result in significant adverse impact.’ What documentation with respect to Kentucky did EPA rely upon in making this statement?” (p. 5).

e. Insufficient Scientific Evidence/ Insufficient Peer Review

The Kentucky Energy and Environment Cabinet asks many questions regarding statements made in the Guidance and the sources of the supporting scientific evidence. In general, the comments and questions in this letter suggest that insufficient scientific evidence has been referenced in the Guidance to support claims of adverse environmental impacts from surface coal mining in Kentucky.

The comment letter questions the scientific data referenced in the Guidance regarding impaired stream life downstream from surface mining, citing discrepancies between the scientific data utilized in the Guidance, and that used for a different draft EPA document. The commenter writes: “EPA’s assertion appears to be refuted in U.S. EPA’s draft document ‘The effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystem of the Central Appalachian Coalfields’ on page 55 ‘there is little evidence in the peer-reviewed literature of cumulative impacts of mining on downstream ecology. Fulk et al. (2003) found no evidence of additive effects of multiple mines on the fish. In another MTM-VF [Mountaintop Mining-Valley Fill] study, Pond, et al. (2008) reported no evidence of a significant relationship between the number of valley fills and macro invertebrate indices” (p. 4).

The letter also requests clarification of the noted discrepancy and documentation of scientific data specific to Kentucky to support comments made in the Guidance. In addition, the commenter requests identification of scientific data and reports to support comments made in the Guidance by asking the following questions:

- “5. Please identify the recent scientific reports ... and the list of other pollutants and pollutant parameters demonstrated by these recent scientific reports in Kentucky to cause or contribute to significant water quality impacts below surface mining operations other than conductivity and total dissolved solids” (p. 5); and
- “7. At the bottom of Page 11, the Q & A indicates that ‘to date, there is no evidence that the streams that have been restored have returned to their normal ecological functions after the mining is completed,’ what documentation with respect to Kentucky did U.S. EPA rely upon in making this statement?” (p. 6).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

4. INDUSTRY

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below:

- Gorman Company, LLC (Doc. #0013.1);
- Kentucky Union Company (Doc. #0014.1);
- Black Gold Sales, Inc. (Doc. #0016.1);
- Hazard Coal Corporation (Doc. #0017.1); and
- Kycoga Company, LLC (Doc. #0018.1).

In general, the comments do not support the Guidance, and discuss the validity and adequacy of material referenced in the Guidance, the suitability of eco-region use, and scientific review.

a. Scientific Validity of Material Referenced in Guidance

Frost Brown Todd disagree that the Guidance is based on valid scientific evidence and express concern that the standards set by the Guidance will change once they have been subjected to peer review and “scientific scrutiny.”

They recommend that EPA “engage in rigorous, scientifically valid, and peer reviewed analysis of relevant and available scientific data before attempting to impose any additional specific requirements on permits for coal mining activities” (p. 1). They contend that it is not sound science to set new standards based on scientific studies that have not been thoroughly peer reviewed and state that “It is unclear why EPA believes that it constitutes (...) sound science to

begin implementing a strict numeric limit when the science behind that limit has not even been ‘truthed’ out” (p. 9).

Frost Brown Todd suggest that the conductivity standard in the Guidance is based on limited scientific data, “Despite numerous statements in EPA’s documents about ‘extensive’ data supporting its analysis, EPA’s conclusions about the effects of surface coal mining on conductivity and the effects of conductivity on aquatic ecosystems in the region appear to be based largely on a single study – the so-called Pond-Passmore study – conducted in 2008” (p. 9).

Frost Brown Todd also argue that any changes may greatly impact projects permitted under the current Guidance: “... these detailed stringent requirements ... are based on scientific data and conclusions that have not been subjected to peer review or scientific scrutiny. This clearly is a case of putting the policy ‘cart’ before the scientific ‘horse” (p. 4).

c. Suitability of Ecoregion Use in Guidance

Frost Brown Todd question the applicability of the Guidance solely to Central Appalachia and argue that the suitability of ecoregion use in the Guidance is not science-based but rather a way to specifically target the coal mining industry in Appalachia through the use of policy. They question why the guidance is not applicable to other regions of the country with mining activities: “EPA has not articulated any reasonable or clear basis for the scope of these new rules – whether based on geography or industry” (p. 7). In addition they state: “It is also unclear why EPA has sought to limit the applicability of this conductivity limit to ‘Central Appalachian streams containing the types of soil found in those streams.’ Why is this information not relevant to other streams, regions, or industries? EPA’s conductivity benchmark in fact appears to be an artificial limited and manipulated standard designed to target a specific industry in a specific region, with the sole purpose of making the continued practice of that industry a practical impossibility” (p. 9).

d. Scientific Review and Technical Recommendations for Project Review and Monitoring

Frost Brown Todd recommend that the Guidance not be implemented immediately on permits for coal mining activity. They contend that prior to implementation of the Guidance on permit and project review the scientific data referenced should be subjected to scientific peer review: “EPA also should engage in a rigorous, scientifically valid, and peer reviewed analysis of relevant and available scientific data before attempting to impose any additional specific requirements on permits for coal mining activities” (p. 2).

Frost Brown Todd convey their opinion that once the scientific data has been reviewed the Guidance may change. which will negatively impact projects that are permitted under the current Guidance, as they are subject to different requirements: “Those permits are likely to be based upon requirements in the ‘interim’ Guidance that may prove unnecessarily stringent, scientifically invalid, or otherwise legally unnecessary” (p. 4).

e. Insufficient Scientific Evidence and Insufficient Peer Review

Overall, the comment letter by Frost Brown Todd states their opinion that the Guidance is based on insufficient scientific evidence that has not been adequately peer reviewed or proven. They express their concern that the Guidance will have a detrimental impact on the coal mining industry in Appalachia and that insufficient scientific data and evidence have been referenced to support its requirements: “This hardly appears to be the kind of extensive data that EPA purports to rely upon, nor does it appear to be the kind of extensive data on which such a far- reaching and potential devastating limit should be based. Yet this is what EPA has done” (p. 9).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

6. OTHER NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

7. ACADEMIA/ PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

One letter (Doc. #0015) received from congressional delegates comments on the issue of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. This letter is signed by 23 Congressional Delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming. In general the comment letter is not supportive of the Guidance, and is critical of the peer review process used by EPA for reviewing the scientific data prior to issuance of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

The congressional delegates express their opinion that the scientific data referenced in the Guidance should be subject to outside peer review prior to implementation: “We believe these proposals should be subject to public comment, as well as outside peer review for any draft scientific data, prior to implementation, so as to strike a better balance between environmental protections and responsible governance” (p. 1).

9. PRIVATE CITIZEN – GENERAL

Of the 84 comment letters posted by the docket as of December 1, 2010 by members of the general public, 30 letters commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. All letters but one (Doc. #0249) generally approve of the Guidance and its supporting materials.

a. Scientific Validity of Material Referenced in Guidance

A majority of the commenters support the scientific validity of materials referenced by the Guidance. Multiple comment letters state that "... there is unequivocal evidence from numerous studies both within the EPA and by independent scientists documenting that conductivity is elevated in waterways downstream from mountaintop removal mines in central Appalachia." It should be noted that this language is also found in the mass mailing campaign sponsored by Sierra Club (Doc. #0103).

Other commenters express support for the scientific material referenced in the Guidance with the following common statement: "The most recent, peer – reviewed scientific information documents the harm that mountaintop removal causes to water quality. Based on research showing a strong relationship between conductivity of at least 300 – 500 μ S/cm and harm to aquatic life, the policy will help ensure clean water." It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022).

b. Scientific Materials Not Reviewed/ Referenced by Guidance

Several commenter letters included the following common statement referencing a supplemental 2010 scientific article by Margaret Palmer that supports scientific materials referenced by the Guidance, "A recent peer-reviewed scientific article details the harm that mountaintop removal causes to water quality (Doc. #0180)." A reference to this scientific article is also mentioned by another commenter (Doc. #0222.1) quoting from the article the following statement regarding science and regulation: "The best available science clearly demonstrates that the impacts of mountaintop removal are 'pervasive and irreversible' and that 'current attempts to regulate mountaintop removal practices are inadequate'" (p. 1).

e. Insufficient Scientific Evidence/ Insufficient Peer Review

Many of the commenters in support of the Guidance and the referenced scientific reports share the common opinion that the mining practice of valley fills should not be allowed. Some commenters suggest that additional research should be funded by EPA for the study of the impacts of valley fills. One commenter writes (Doc. #0186): "The EPA must fund comprehensive research aimed at increasing your understanding of the impacts of valley fills"(p. 2).

Multiple letters identify their objections to mitigation through stream creation and provide the following statement related to insufficient scientific evidence: "EPA should strengthen the policy by refusing to permit mitigation (...) it is not possible to re-create the ecological functions of

streams. Similarly, EPA must not allow for the sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation downstream (Doc. #0189).”

In general, most comment letters support the scientific reports referenced by the Guidance. However, in addition to the referenced scientific evidence they suggest that funding for additional research will further develop an understanding of the adverse impacts of valley fills.

The commenter that opposes the Guidance (Doc. #0249) is of the opinion that there is insufficient scientific evidence to prove that mountaintop mining and the practice of valley fills affect the ecological services provided by streams: “Lobbyists will tell you that scientific research suggests that one valley fill is too many, because of the unique headwater streams lost along with the ecological serviced they provide this is not supported by facts.”

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of the Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia had not been posted by the docket. Any comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. These campaigns are supportive of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

The comments in the letters from both the Earthjustice and Sierra Club campaigns support the scientific validity of material referenced in the Guidance. The Earth Justice campaign (Doc. #0022) states: “I support this Guidance because there is unequivocal evidence from numerous

studies both within the EPA and by Independent scientists documenting that conductivity is elevated in the waterways downstream from mountaintop removal mines in central Appalachia.” The comment letter goes on to state: “The best available science shows strong relationships between conductivity of at least 300 – 500 µS/cm, and harm to aquatic life in the affected streams.”

The Sierra Club campaign (Doc. #0103) argues that “The most recent, peer reviewed scientific information documents the harm that mountaintop removal causes to water quality.” Comments in the letter include the support of scientific research documenting the relationship between higher levels of conductivity and water quality referenced in the Guidance.

e. Insufficient Scientific Evidence/ Insufficient Peer Review

The Sierra Club letter (Doc. #0103) expresses opposition to the Guidance allowing for the sequencing of valley fills due to insufficient scientific evidence. They convey their opinion that “EPA must not allow sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation of downstream waters.”

13. UNKNOWN

Ten letters posted by the docket as of December 1, 2010 from unknown sources commented on the issue area of Science Regarding Environmental Impacts from Surface Coal Mining in Appalachia. Of the ten comment letters, all but one letter (Doc. #0010) are in support of the Guidance.

a. Scientific Validity of Material Referenced in Guidance

Several of the comment letters identify scientific research referenced in the Guidance demonstrating the loss of 2,000 miles of streams and headwaters due to mountaintop removal and express their appreciation that EPA is supporting this scientific research: “I am also pleased that EPA has recognized the role of the Clean Water Act to support this scientific research and protect the people of Appalachia (Doc. #0192).”

One comment (Doc. #0010) opposes the science referenced, including the research from the Pond study by stating that the “Guidance is based on scientific studies that are limited in scope and analysis.”

b. Scientific Validity of Material Referenced in Guidance

Several comment letters include the following statement referencing a supplemental 2010 Science article by Margaret Palmer that supports scientific materials referenced by the Guidance: “A recent peer-reviewed scientific article details the harm that mountaintop removal causes to water quality (Doc. #0187).”

e. Insufficient Scientific Evidence/ Insufficient Peer Review

Many of the commenters who support the Guidance and the referenced scientific reports share the common opinion that the practice of valley fills when mining should not be allowed. Some commenters suggest that additional research should be funded by EPA for the study of the impacts of valley fills. Multiple commenters state: “The EPA must fund comprehensive research aimed at increasing your understanding of the impacts of valley fills.” Many of these comment letters also include the following statement of opposition to the valley fill practice citing insufficient scientific evidence: “EPA must not allow for the sequencing of valley fills; there is no scientific evidence demonstrating that sequential construction of stream burial sites avoids the devastation downstream waters (Doc. #0211).”

II. Federal Authority to Regulate these Activities (Generally)

Pursuant to the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), and the Environmental Justice Executive Order (E.O. 12898), the United States Environmental Protection Agency Region III (EPA) has issued Guidance clarifying the review of Appalachian Surface Mining Operations. This Guidance was issued to assure that federal and state partners issue permits for these activities that prevent harmful public health, water quality, and other environmental impacts associated with surface coal mining operations in Appalachia, and that public comments from those affected communities are taken into consideration.

The issue area of Federal Authority to Regulate these Activities includes those comments, recommendations, and opinions submitted by stakeholders regarding the relationship of the CWA, NEPA, and the Executive Order on Environmental Justice to the Surface Mine Coal Reclamation Act (SMCRA); as well as the authority, roles, and responsibility of federal and state agencies.

There were a total of 45 tallied comments submitted to the docket as of December 1, 2010, discussing federal authority to regulate these activities. These were submitted by different types of commenters, including a state agency, representatives of the mining industry, an environmental non-governmental organization (NGO), congressional delegates, the general public, and mass mailing campaigns. Most comments were received from private citizens and mass mailing campaigns, but were not as substantive as those received from other stakeholders. Figure 2-1 on the next page presents the total comment letters that address the federal authority to regulate these activities issue by commenter category.

Most comments from private citizens and the mass mailing campaigns are in general agreement with the Guidance and support EPA's regulatory authority. It should be noted that some of the comment letters received from private citizens may be modified mass mailers, as they use language similar, if not identical to mass mailing campaigns identified by the docket. These comment letters were summarized with other unique letters because they raise issues beyond what was raised by the mass mailing campaign letters.

Industry commenters and congressional delegates are in general opposition to the Guidance, while the environmental NGO (The Sierra Club) and the state agency (the Commonwealth of Kentucky Energy and Environment Cabinet) are in general support of the Guidance. Industry commenters contend that the Guidance contradicts established authorities and regulatory structures, could create unfair precedents, and should be withdrawn. Congressional delegates argue that the Guidance represents substantial changes that exceed the intent of the "Acts" (i.e., CWA, NEPA, and SMCRA), and undermines the authority, role, and responsibility of State agencies in reviewing and issuing permits. The Sierra Club urges EPA to ensure prompt implementation of the Guidance at the state and federal levels. The Kentucky Energy and Environment Cabinet seeks clarification on Guidance implementation through a series of questions, some of which are related to Federal and State authorities.

Below are summaries, presented by commenter category, on the issue of federal authority to regulate these activities as it relates to the Guidance. Under each commenter category, all sub-issues commented on are listed by letter (based on the issue outline) and are discussed. Not all commenter categories discussed all sub-issues; therefore not all sub-issues are listed under each commenter category.

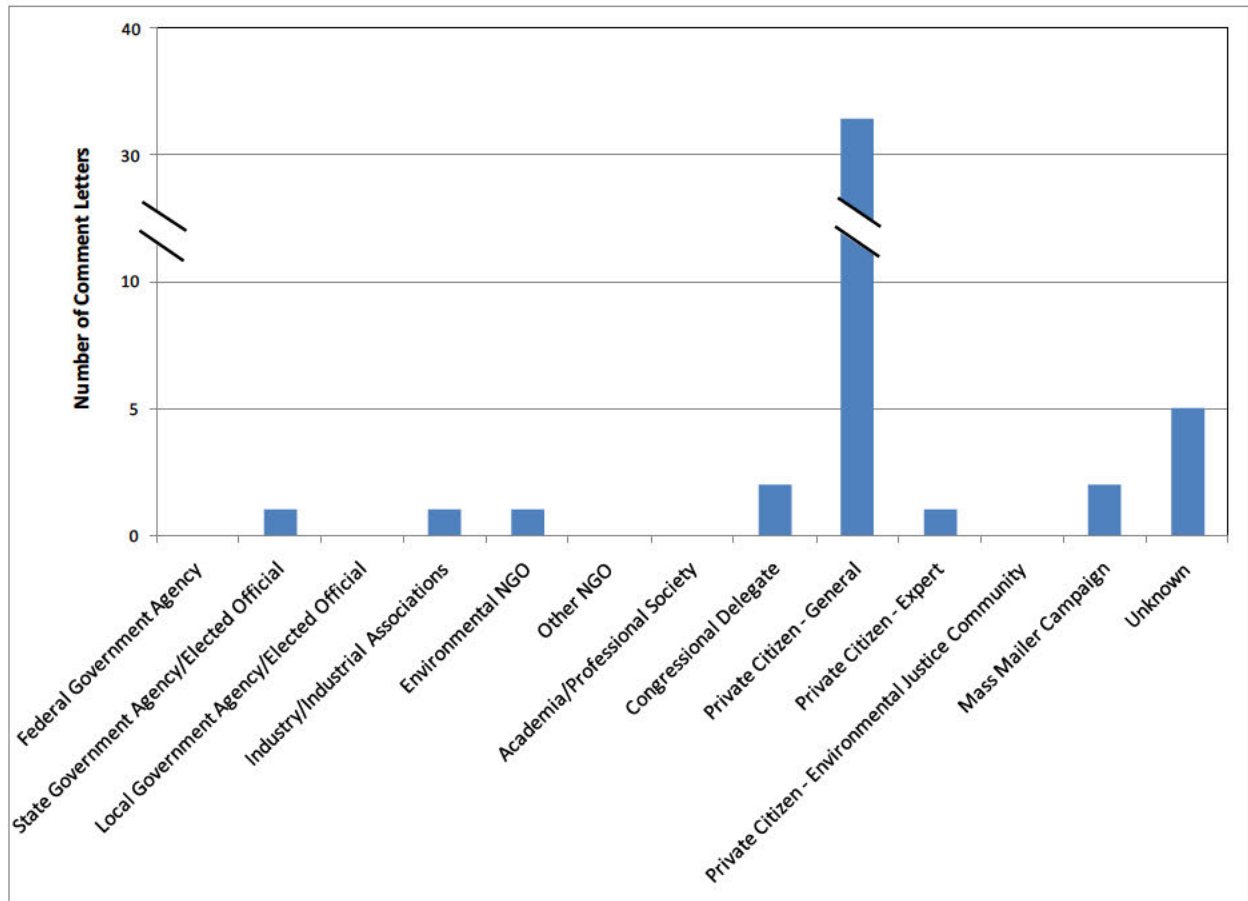


Figure 2-1. Federal Authority, Total Comment Letters by Commenter Category

1. FEDERAL GOVERNMENT AGENCIES

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

2. STATE GOVERNMENT AGENCIES AND ELECTED OFFICIALS

The Kentucky Energy and Environment Cabinet letter (Doc. #0012) was the only comment received from a state government agency or elected official. The Cabinet generally supports the Guidance but is unclear about its application in certain instances. Their comment letter presents a series of questions to EPA, seeking clarification to assist them in responding to pending permits for surface coal mining in compliance with existing regulations.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to SMCRA

The Kentucky Energy and Environment Cabinet would like a clarification on the term “mountain top mining” in the context of the SMRCA, which they state is different from surface coal mining operations in general (q. A.1). They ask if the Guidance is for mountaintop mining or for surface mining operations as a whole (q. B.8). Furthermore, they would also like to know if it is correct to assume that the Guidance does not apply to coal mining operations (q. A.2).

b. Authority, Role, and Responsibility of Federal and State Agencies

The Kentucky Energy and Environment Cabinet referenced the detailed Guidance – footnote 3 to state that it “does not impose legally binding requirements on EPA, the U.S. Army Corps of Engineers (Corps), the States, or the regulated community, and may not apply to a particular situation depending upon the circumstances.” They ask for clarification on the legal authority of the April 1, 2010 announcement and its associated references, with respect to delegated states’ implementation, and EPA oversight of state delegated CWA Section 402 permitting programs (q. A.6). They would also like to know if the interim final Guidance represents the final EPA determination subject to judicial review (q. A.7).

In addition, they are also asking if EPA will proactively continue to provide technical support in the future and if EPA will commit to providing additional CWA 106 funding to the Commonwealth, to address limited staff resources for permit reviews (q. A.19 and B.6).

Finally, they ask if the Guidance is limited to certain states and Appalachian eco-regions, and if so, to clarify the basis for applying the Guidance only to certain states (q. A.8 and A.17).

3. LOCAL GOVERNMENT AGENCIES AND ELECTED OFFICIALS

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

4. INDUSTRY OR INDUSTRIAL ASSOCIATIONS

Five comment letters were received from industry representatives regarding the federal authority to regulate these activities. The letters were all submitted by Frost Brown Todd Attorneys, LLC, (Frost Brown Todd) on behalf of their clients, listed below.

- Gorman Company, LLC (Doc. #0013);
- Kentucky Union Company (Doc. #0014);
- Black Gold Sales, Inc. (Doc. #0016);
- Hazard Coal Corporation (Doc. #0017); and
- Kycoga Company, LLC (Doc. #0018).

The bodies of all five letters are identical, except for the name of the represented client. The letters are generally in opposition to the Guidance.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to SMCRA

With respect to federal authority, Frost Brown Todd claim that the Guidance is in contradiction with established authorities and regulatory structures, and could create precedents that may result in unfair treatment of all applications. Specifically, they state that the “methods through which EPA has instructed to its regions to enforce those requirements, violate the carefully balanced federal-state regulatory structure established by Congress under the CWA, the SMCRA, and related environmental laws” (p. 4). Frost Brown Todd further describe the Guidance as “heavy-handed requirements [that] not only contradict the long-established regulatory standards, authorities, and programs under the CWA, SMRCA and related statutes – they threaten to establish precedents that would undermine the consistent and fair application of those statutes to activities and industries throughout the United States” (p. 5).

b. Authority, Role, and Responsibility of Federal and State Agencies

Frost Brown Todd request that EPA withdraw its Guidance which they see as unlawful and confusing, and superseding legitimate authority from other agencies to regulate these activities. They also request that EPA instruct relevant agencies not to implement or apply the Guidance as it currently stands.

Specifically, Frost Brown Todd states that the Guidance is “inconsistent with EPA’s statutory authorities, and imposes an unconstitutional taking of property” (p. 2), and in violation of “the rights of the states and other federal agencies to exercise their own statutory authorities” (p. 6).

In addition, Frost Brown Todd would like EPA to “instruct all relevant state and federal agencies and EPA regions that the requirements of the Guidance are not to be implemented or applied under any circumstances until further notice; and not adopt any further requirements without the benefit of a full and fair public process, based upon input from all interested stakeholders, and in compliance with the requirements of notice-and-comment rulemaking” (p. 2).

Frost Brown Todd further claims that “EPA also seeks to supersede the Corps’ authority in administering the Section 404 permitting program and working with the states under Section 401” (p. 5). They also state that the Guidance “improperly presumes that NPDES general permits may not be used to authorize activities associated with coal mining” (p. 5) and that the Guidance itself will “create unnecessary confusion and uncertainty, and treats the states, regions, and industries inequitably” (p. 7).

5. ENVIRONMENTAL NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

As of December 1, 2010, one letter was submitted from an Environmental NGO commenting on the issue of federal authority to regulate these activities in EPA’s Guidance. The Sierra Club (Doc. #0225) strongly supports the Guidance and commends EPA for issuing it.

b. Authority, Role, and Responsibility of Federal and State Agencies

Although not stating it directly, the Sierra Club supports the EPA's authority to regulate these activities in urging "EPA to make sure that its regional offices and other federal and state agencies adhere to the guidance and do not issue permits that are contrary to the Guidance" (p. 1).

6. OTHER NGOS

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

7. ACADEMIA/PROFESSIONAL SOCIETIES

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

8. CONGRESSIONAL DELEGATES

Two comment letters posted by the docket as of December 1, 2010 were submitted by congressional delegates. Both letters are signed by several members of Congress, are in general opposition to the Guidance, and address the issue of federal authority. The first letter (Doc. #0011) is signed by three congressional delegates representing the States of Virginia and West Virginia. The second letter (Doc. #0015) is signed by 23 congressional delegates from 14 different states, including Alabama, Alaska, Colorado, Illinois, Kentucky, Michigan, Montana, Ohio, Pennsylvania, Tennessee, Utah, Virginia, West Virginia, and Wyoming.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to Surface Mining Control and Reclamation Act (SMCRA)

The letter signed by 23 congressional delegates (Doc. #0015) argues that guidance is usually issued to clarify or further explain an agency's interpretation of a statute or regulation, but that the April 1, 2010 Guidance appears to make substantive changes and exceeds the original intent of the Acts. Specifically, they identify changes to "three sections of the CWA, along with various provisions of the NEPA and the SMCRA" (p. 1). They further argue that with its "sweeping regulatory action far exceeds the intent of Congress under these Acts" (p. 1) and that they are "troubled by federal efforts to undermine Congressional intent on primary state regulatory authority under SMCRA and the CWA" (p. 2).

b. Authority, Role, and Responsibility of Federal and State Agencies

Both comment letters are opposed to EPA's Guidance, and argue that it usurps certain authorities. The letter signed by congressional delegates from Virginia and West Virginia (Doc.

#0011) criticizes the Guidance's restricted applicability to Appalachia and to surface coal mining operations. They state that "Not only is there no precedent for such an action, but it is also patently a wrong approach to implementing the CWA" (p. 1). The letter signed by 23 congressional delegates representing 14 States (Doc. #0015) criticizes the Guidance because it undermines the authority, roles, and responsibility from state agencies when reviewing and issuing mining permits: "Such a determination threatens the cooperative federalism system Congress created in both SMRCA and CWA" (p. 2). They further argue that under the CWA, States have "the power to design state-specific conditions to federal permits" (p. 2) and this approach "recognizes that state regulators at the local level are better equipped to interpret water quality standards and apply them to site-specific permits because they have in-depth knowledge of local watersheds, their conditions and their long-term plans for improvement" (p. 2).

9. PRIVATE CITIZEN - GENERAL

Thirty two comment letters, typically one page in length, submitted by members of the general public comment on the issue of federal authority to regulate these activities. All of the letters are in support of the Guidance and most of them applaud or thank the EPA for recognizing the need to address this issue.

a. Relationship of Clean Water Act, NEPA, and the Executive Order on Environmental Justice to Surface Mining Control and Reclamation Act (SMCRA)

Six of the commenters state that this Guidance is valuable "to ensure that regional staff will finally follow CWA requirements." It should be noted that this language is also found in the mass mailing campaign sponsored by Earthjustice (Doc. #0022).

b. Authority, Role, and Responsibility of Federal and State Agencies

Most commenters supported EPA's role in regulating these activities, and wished to encourage stronger authority. They urged EPA to "strengthen and finalize the guidance and make sure that its regional offices and other federal and state agencies adhere to the policy and do not issue permits that are contrary to the guidance." They also urged EPA to "assure state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance."

One commenter wishes to encourage federal agencies to "follow consistent and strict application of the rules and regulations that are otherwise turned over for enforcement by local/state EPA agencies (Doc. #0178)."

10. PRIVATE CITIZEN – EXPERT

As of December 1, 2010, one letter was submitted from a private citizen - expert commenting on the issue of federal authority to regulate these activities in EPA's Guidance. The commenter is a biologist, with a Masters degree in biology, and is currently a teacher teaching wildlife management and environmental earth science (Doc. #0112).

b. Authority, Role, and Responsibility of Federal and State Agencies

The commenter strongly supports the Guidance, commends EPA for issuing it, and urges EPA to “to ensure that regional staff will finally follow CWA requirements.”

11. ENVIRONMENTAL JUSTICE AND/OR TRADITIONALLY DISADVANTAGED COMMUNITY

As of December 1, 2010, comments from this category group discussing the issue area of the federal authority to regulate these activities had not been posted by the docket. Any subsequent comments received will be addressed in the final summary.

12. FORM LETTERS AND MASS MAILER CAMPAIGNS

A number of comment letters were sponsored by mass mailing campaigns, or were identified as being “form mailers” when multiple copies of the same letter with a few minor changes were submitted to the docket under different document numbers. As of December 1, 2010, two distinct campaigns were identified by the docket as sponsored by the following NGOs (Document numbers identify the letter representative of the campaign, as indicated by the docket):

- Earthjustice (Doc. #0022); and
- The Sierra Club (Doc. #0103).

Both campaigns are in support of EPA’s Guidance and suggest that the Guidance should be strengthened and finalized.

b. Authority, Role, and Responsibility of Federal and State Agencies

The Sierra Club urges EPA to “strengthen and finalize the guidance and make sure that its regional offices and other federal and state agencies adhere to the policy and do not issue permits that are contrary to the guidance (Doc. #0103).” This statement is echoed by many general private citizens in their comment letters.

Earthjustice urges regional staff to follow the CWA requirements and urges EPA to “assure state and federal agencies do not issue permits that are contrary to the clear science and legal requirements discussed in the guidance (Doc. #0022).” Another exact statement made by many general private citizens in their comment letters.

13. UNKNOWN

Five comment letters received from unknown or unidentified commenters discuss federal authority to regulate these activities. Of the five comment letters, all but one letter (Doc. #0010) are in support of the Guidance.

b. Authority, Role, and Responsibility of Federal and State Agencies

Similar to the mass mailing campaign sponsored by Earthjustice, the four comment letters supporting the Guidance urge EPA not to issue permits that are “contrary to the guidance” or “contrary to the clear science and legal requirements discussed in the guidance.”

The comment letter in general opposition to the Guidance states that “EPA has no right dictating to the states how to administer their water quality programs and it is the states who shall determine what criteria is to be met (Doc. #0010).”

**Alaina
DeGeorgio/R3/USEPA/US**

01/25/2011 02:45 PM

To Jessica Martinsen, Jennifer Fulton

cc Jeffrey Lapp

bcc

Subject Peg Fork AMP v.3.1 draft comments

Hi,

I've taken a look at the latest version of the AMP for Peg Fork and have been working on putting together some draft comments. I've added additional comments based on this version to our previous comments from October. It seems like a lot of changes have been made to address most of our previous comments. My comments this time are mostly clarification and questions on some points in the AMP. Some of these questions may be able to be answered internally. If you have a moment, perhaps you may be able to look some of these questions over. If you have any comments or questions that you'd like to add, please let me know. Any thoughts or comments on the draft would be much appreciated.

Thanks,

Alaina



AMP version 3.1 comments.docx

ATTACHMENT REDACTED--DELIBERATIVE

Alaina DeGeorgio
EPA Region III
1650 Arch St.
Philadelphia, PA
(215) 814-2741

**Matthew
Klasen/DC/USEPA/US**

01/25/2011 06:17 PM

To Matthew Klasen

cc

bcc

Subject OSM

mk



ATTACHMENT REDACTED - DELIBERATIVE

EIS Comment form - Chapter 4 - mk.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Matt Klasen

(b) (6)

01/25/2011 06:18 PM

To Matthew Klasen

cc

bcc

Subject

1 attachment



ATTACHMENT REDACTED - DELIBERATIVE

EIS Comment form - Chapter 4 - mk.docx

Matthew
Klasen/DC/USEPA/US
01/26/2011 12:53 PM

To Ross Geredien
cc Elaine Suriano, Justin Wright
bcc
Subject Re: OFA's OSM Chapter 4 comments

And attached are my comments. Unfortunately I didn't have a chance to get through Alternative 5, but I did get through #1, and I bet many of my comments in #1 also affect other parts of the document.

We should certainly let OSM know that we may follow up with other comments later in the week.

Elaine, I won't have a chance to take a look at others' comments this afternoon (most likely), so perhaps we send along everything we have right now and note that we may supplement.

(b) (5)

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

EIS Comment form - Chapter 4 - mk.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Ross Geredien Mine are attached. I did as much as I could. Co... 01/26/2011 12:30:54 PM

From: Ross Geredien/DC/USEPA/US
To: Elaine Suriano/DC/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA, Justin Wright/DC/USEPA/US@EPA
Date: 01/26/2011 12:30 PM
Subject: Re: OFA's OSM Chapter 4 comments

Mine are attached. I did as much as I could. Could easily have done much more with more time.

[attachment "EIS Comment form - Chapter 4 - rpg.docx" deleted by Matthew Klasen/DC/USEPA/US]

Elaine Suriano M and R ajd J - Thansk again for taking the tim... 01/25/2011 09:40:25 PM

From: Elaine Suriano/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Justin Wright/DC/USEPA/US@EPA, Ross Geredien/DC/USEPA/US@EPA
Date: 01/25/2011 09:40 PM
Subject: OFA's OSM Chapter 4 comments

M and R ajd J -

Thansk again for taking the time to have the call this afternoon. I combined J and my comments. I am too tired to do any more tonight. I'll review again in the AM, but so you have a sense of our comments, and my take away from the call. Feel free to edit.

[attachment "Chap_4_ofa_cmts.docx" deleted by Ross Geredien/DC/USEPA/US]

E....

Elaine Suriano
Office of Federal Activities
Environmental Scientist
Ph-202/564-7162, Fx-564-0072

General Mail Delivery
US EPA (2252-A)
1200 Penna Ave., NW
Washington DC 20460-0001

Fed EX, UPS or Courier
US EPA (Rm 7235 C)
1200 Penna Ave., NW
Washington DC 20004
202/564-5400

Elaine Suriano/DC/USEPA/US

01/26/2011 02:06 PM

To "Craynon, John"

cc Justin Wright, Matthew Klasen, Ross Geredien

bcc

Subject EPA's Comments - Chapter 4/SPR EIS OSM SPR Prelim.
EIS Chapter 4

John -

Attached are EPA's (Office of Water and OFA) comments on Chapter 4. It is possible we may send a few more comments later this week or next. We needed a bit of extra time. If you have questions feel free to give me a call on the NEPA related issues and Matthew a call (202 566 0780).



ATTACHMENT REDACTED - DELIBERATIVE

EPA_Chap_4_EIS Comment form.docx

Regards, E...

Elaine Suriano
Office of Federal Activities
Environmental Scientist
Ph-202/564-7162, Fx-564-0072

General Mail Delivery
US EPA (2252-A)
1200 Penna Ave., NW
Washington DC 20460-0001

Fed EX, UPS or Courier
US EPA (Rm 7235 C)
1200 Penna Ave., NW
Washington DC 20004
202/564-5400

**Matthew
Klasen/DC/USEPA/US**

01/26/2011 03:51 PM

To Gregory Peck

cc

bcc

Subject Updated one-pager



ATTACHMENT REDACTED - DELIBERATIVE

2011-01-26 MTM permitting issues.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Gregory Peck/DC/USEPA/US
01/26/2011 04:20 PM

To MichaelG Lee, Karyn Wendelowski, Gautam Srinivasan,
Kevin Minoli
cc
bcc
Subject Draft Strategic Paper

Can you take a quick look and let us know what you think. Would this help for this afternoon's discussions?

Thanks



Document Withheld-FOIA(b)(5)

Mining Strategy JAN 26 11.docx

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

202-564-5778

David Hair/DC/USEPA/US
01/27/2011 12:31 PM

To Tom Lavery, Marcus Zobrist, Js Wilson, Sharmin Syed
cc Gary Hudiburgh
bcc
Subject Edits to April 1 Guidance

Folks,

I won't be able to make the meeting next week, but wanted to pass along some possible edits to the April 1 guidance. (b) (5)

. That's what I tried to do.



ATTACHMENT REDACTED - DELIBERATIVE

April 1 2010 guidance (final).doc

(b) (5)

. I'm not sure how this will shake out.

Dave

David Hair
Environmental Engineer
USEPA - Water Permits Division
7421J - EPA East
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Phone: 202-564-2287
Fax: 202-564-6392

Allison
Graham/R3/USEPA/US
01/28/2011 10:19 AM

To Jessica Martinsen, lapp.jeffrey
cc
bcc
Subject Spring Branch No. 3 Revised Documents

2 attachments



Mining_ECP_Briefing Paper_SpBrNo3 1-28-11-EPA_edits.doc SpBrNo3 60 Day 1_28_11.doc

ATTACHMENTS REDACTED-DELIBERATIVE

Jeff and Jessica,

I have incorporated HQ comments into the Spring Branch No. 3 Deep Mine Project 60 Day Letter and Fact Sheet. Feel free to review and pass along as appropriate. If you need me to make any additional changes, please let me know.

Thank you for your assistance,
Allison

Allison M. Graham, E.I.T.
Environmental Engineer
NPDES Enforcement Branch

U.S. EPA Region III, Water Protection Division
Office of Permits & Enforcement
1650 Arch Street (3WP42)
Philadelphia, PA 19103-2029
Phone: (215) 814-2373
Fax: (215) 814-2302

Christopher
Hunter/DC/USEPA/US
01/28/2011 11:57 AM

To: Brian Frazer, David Evans
cc: Brian Topping, Marcel Tchaou, Ross Geredien
bcc:
Subject: FOR YOUR REVIEW AND FORWARDING - Spring Branch
No. 3 Revised Documents

Brian and Dave,
attached are the revised Spring Branch Mine ECP closeout letter and briefing sheet. The previous version of the letter was reviewed by WD, OW, and OGC, with only minor edits. Given the significant improvements made as part of the ECP process, we would like to

(b) (5)

If you have any questions, please contact me or Brian Topping

Proposed Resolution: (b) (5)

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

-----Forwarded by Christopher Hunter/DC/USEPA/US on 01/28/2011
11:50AM -----

To: Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
From: Jessica Martinsen/R3/USEPA/US
Date: 01/28/2011 11:10AM
Cc: William Early/R3/USEPA/US, John Pomponio/R3/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA
Subject: ECP - Spring Branch No. 3 Revised Documents



Brian, Chris:

Please find attached the clean copy of the End of 60-day letter and the Briefing document which incorporates all suggested edits and changes received from HQ and the Region to date. We await approval from both HQ management and Regional management to send the letter to the Corps and to close-out the review of the Spring Branch No. 3 project. Thank you for your assistance and review of the documents. Your input is most helpful.

(See attached file: Mining_ECP_Briefing Paper_SpBrNo3 1-28-11-EPA_edits.doc) (See attached file: SpBrNo3 60 Day 1_28_11.doc)

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)

ATTACHMENTS REDACTED - DELIBERATIVE

215-814-2783 (fax)  - Mining_ECP_Briefing Paper_SpBrNo3 1-28-11-EPA_edits.doc  -
SpBrNo3 60 Day 1_28_11.doc

Jim
Pendergast/DC/USEPA/US
01/31/2011 11:26 AM

To Christopher Hunter
cc Brian Frazer, David Evans
bcc
Subject Re: Fw: ECP - Spring Branch No. 3 Revised Documents

Chris -- One question. (b) (5)

im

Christopher Hunter Dave, (b) (5) 01/31/2011 09:43:39 AM

From: Christopher Hunter/DC/USEPA/US
To: David Evans/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jim Pendergast/DC/USEPA/US@EPA
Date: 01/31/2011 09:43 AM
Subject: Fw: ECP - Spring Branch No. 3 Revised Documents

Dave,
(b) (5)

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov
----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/31/2011 09:39 AM -----

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Cc: William Early/R3/USEPA/US, John Pomponio/R3/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA
Date: 01/28/2011 11:10 AM
Subject: ECP - Spring Branch No. 3 Revised Documents

Brian, Chris:

Please find attached the clean copy of the End of 60-day letter and the Briefing document which incorporates all suggested edits and changes received from HQ and the Region to date. We await approval from both HQ management and Regional management to send the letter to the Corps and to

close-out the review of the Spring Branch No. 3 project. Thank you for your assistance and review of the documents. Your input is most helpful.

[attachment "Mining_ECP_Briefing Paper_SpBrNo3 1-28-11-EPA_edits.doc" deleted by Jim Pendergast/DC/USEPA/US] [attachment "SpBrNo3 60 Day 1_28_11.doc" deleted by Jim Pendergast/DC/USEPA/US]

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Jim
Pendergast/DC/USEPA/US
01/31/2011 01:57 PM

To Denise Keehner, Benita Best-Wong
cc Tanya Code, David Evans, Brian Frazer, Christopher Hunter
bcc
Subject Fw: ECP - Spring Branch No. 3 Revised Documents

Denise -- Attached are 1) the letter Region 3 intends to send to the Corps about the permit and 2) a 1.5 page briefing paper that explains why this permit is OK to go forward. These materials can go forward to Nancy and Bob S.

Jim Pendergast
Associate Director, Wetlands Division (MC 4502T)
Wetlands Division, Oceans & Watersheds, OW
US EPA
202-566-0398 (phone)

----- Forwarded by Jim Pendergast/DC/USEPA/US on 01/31/2011 01:56 PM -----

From: Christopher Hunter/DC/USEPA/US
To: David Evans/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jim Pendergast/DC/USEPA/US@EPA
Date: 01/31/2011 11:38 AM
Subject: Re: ECP - Spring Branch No. 3 Revised Documents

Revised briefing paper, including water quality.



ATTACHMENTS REDACTED - DELIBERATIVE

SpBrNo3 60 Day 1_28_11.doc Mining_ECP_Briefing Paper_SpBrNo3 1-31-11-EPA_edits.doc

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

David Evans	Thanks Chris - I think it will head off questions fr...	01/31/2011 11:30:43 AM
-------------	---	------------------------

From: David Evans/DC/USEPA/US
To: Christopher Hunter/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Jim Pendergast/DC/USEPA/US@EPA
Date: 01/31/2011 11:30 AM
Subject: Re: ECP - Spring Branch No. 3 Revised Documents

Thanks Chris - (b) (5)

David Evans, Director
Wetlands Division
Office of Wetlands, Oceans and Watersheds
(202) 566-0535
(202) 725-6415 (cell)

-----Sent from my BlackBerry Wireless Handheld

Christopher Hunter

----- Original Message -----

From: Christopher Hunter
Sent: 01/31/2011 09:43 AM EST
To: David Evans
Cc: Brian Frazer; Jim Pendergast
Subject: Fw: ECP - Spring Branch No. 3 Revised Documents

Dave,

(b) (5)



Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

----- Forwarded by Christopher Hunter/DC/USEPA/US on 01/31/2011 09:39 AM -----

From: Jessica Martinsen/R3/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Cc: William Early/R3/USEPA/US, John Pomponio/R3/USEPA/US@EPA, Jeffrey Lapp/R3/USEPA/US@EPA, Stefania Shamet/R3/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Allison Graham/R3/USEPA/US@EPA
Date: 01/28/2011 11:10 AM
Subject: ECP - Spring Branch No. 3 Revised Documents

Brian, Chris:

Please find attached the clean copy of the End of 60-day letter and the Briefing document which incorporates all suggested edits and changes received from HQ and the Region to date. We await approval from both HQ management and Regional management to send the letter to the Corps and to close-out the review of the Spring Branch No. 3 project. Thank you for your assistance and review of the documents. Your input is most helpful.

[attachment "Mining_ECP_Briefing Paper_SpBrNo3 1-28-11-EPA_edits.doc" deleted by David Evans/DC/USEPA/US]

[attachment "SpBrNo3 60 Day 1_28_11.doc" deleted by David Evans/DC/USEPA/US]

Jessica Martinsen
U.S. EPA Region III

Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

**Christopher
Hunter/DC/USEPA/US**

01/31/2011 04:23 PM

To Jim Pendergast

cc

bcc

Subject Recommended actions for surface coal mining

Hi Jim,

in response to your voicemail, attached is the list of recommendations coming out of our September coal meeting with the Regions here in DC. I've highlighted the ones that I think might be most responsive to what you were looking for. Let me know if this isn't what you wanted.

Chris



ATTACHMENT REDACTED - DELIBERATIVE

EPA Surface Coal Mining Guidance Meeting Summary & Recommendations 101410.doc

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

Denise
Keehner/DC/USEPA/US
01/31/2011 04:28 PM

To Nancy Stoner
cc Gregory Peck, David Evans, Christopher Hunter
bcc
Subject Seeking Closure on Spring Branch ECP

Nancy,

We've been working with Region 4, and, I understand staff have had discussions with Greg about bringing the ECP for Spring Branch to closure this week---through an email transaction rather than a briefing/meeting. This is a good example of positive environmental outcomes and positive outcomes for coal---as a result of the ECP process. Please advise as to whether we can bring this to closure w/o an AA level and Sussman briefing. Thanks.

In this case, the project has been significantly revised as a result of the ECP process and now proposes:

(b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



Mining_ECP_Briefing Paper_SpBrNo3 1-31-11-EPA_editsdk.doc



SpBrNo3 60 Day 1_28_11.doc

ATTACHMENT REDACTED - DELIBERATIVE

Timothy
Landers/DC/USEPA/US

11/01/2010 09:04 AM

To Js Wilson

cc Brian Frazer

bcc

Subject Fw: WARRB comments on Premier Elkhorn ECP letter

Scott,

Thought you all might like to look at the draft Premier Elkhorn ECP letter, given some of the underlying 402 issues surrounding this project. This is due from the Region to the Corps District by tomorrow (Tues). Any comments, send directly to Matt and Greg w/copy to me and Chris. Thanks much.

----- Forwarded by Timothy Landers/DC/USEPA/US on 11/01/2010 09:01 AM -----

From: Christopher Hunter/DC/USEPA/US
To: landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA
Date: 10/29/2010 05:37 PM
Subject: WARRB comments on Premier Elkhorn ECP letter

Attached are a clean and redline version of WARRB's recommended edits. OGC and OW have yet to review, but I'm cc'ing Region 4 to give them a sense of the direction.

Thanks,
Chris



clean draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc

ATTACHMENTS REDACTED - DELIBERATIVE

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

Gregory Peck/DC/USEPA/US
11/01/2010 11:11 AM

To kevin.minoli
cc
bcc
Subject Fw: Stream Protection Rule - Draft Note to Bob and Nancy

Kevin:

Didn't realize you were going to be out today. Do you have 5 minutes to talk about this issue and WOUS?

Thanks

----- Forwarded by Gregory Peck/DC/USEPA/US on 11/01/2010 11:03 AM -----

From: Gregory Peck/DC/USEPA/US
To: MichaelG Lee/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/01/2010 10:09 AM
Subject: Stream Protection Rule - Draft Note to Bob and Nancy

Wanted you to have the chance to look at this message to Bob and Nancy regarding comments on the stream protection rule. We're late with this - so would appreciate any thoughts as soon as you can.

Thanks
Greg

Bob and Nancy:

(b) (5)
[Redacted]

(b) (5)
[Redacted]

[Redacted]

[Redacted]

(b) (5)

Thanks,

Greg



ATTACHMENT REDACTED - DELIBERATIVE

Surface and General SPR Text 10-27-10 EPA ed.docx

Gregory E. Peck
Chief of Staff
Office of Water
U.S. Environmental Protection Agency
Washington, D.C. 20460

Timothy
Landers/DC/USEPA/US
11/01/2010 11:27 AM

To Js Wilson
cc
bcc
Subject Re: Fw: Premier Elkhorn ECP letter_11.1.10 v.1

Thanks again Scott.

Js Wilson

Matt: I don't have any comments on this. It looks...

11/01/2010 10:57:01 AM

From: Js Wilson/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Timothy Landers/R6/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA
Date: 11/01/2010 10:57 AM
Subject: Fw: Premier Elkhorn ECP letter_11.1.10 v.1

Matt:

I don't have any comments on this. It looks good from a 402 perspective.

Scott Wilson, Energy Coordinator
Industrial Permits Branch (4203M)
Office of Wastewater Management
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460
202-564-6087

----- Forwarded by Js Wilson/DC/USEPA/US on 11/01/2010 10:56 AM -----

From: Eric Somerville/R4/USEPA/US
To: Timothy Landers/DC/USEPA/US@EPA
Cc: Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Hunter.Christopher@epamail.epa.gov, Js Wilson/DC/USEPA/US@EPA, landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Kip Tyler/R4/USEPA/US@EPA, Chris Thomas/R4/USEPA/US@EPA, Mark Nuhfer/R4/USEPA/US@EPA, Heinz Mueller/R4/USEPA/US@EPA, Daniel Holliman/R4/USEPA/US@EPA, Philip Mancusi-Ungaro/R4/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Stan Meiburg/R4/USEPA/US@EPA
Date: 11/01/2010 09:48 AM
Subject: Premier Elkhorn ECP letter_11.1.10 v.1

Good Day All-

(b) (5)



Thanks.

[attachment "PremElk 898-0800 ltr_11.1.10 v1.doc" deleted by Timothy Landers/DC/USEPA/US]

Eric Somerville

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From: Eric Somerville/R4/USEPA/US
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Cc: Christopher Hunter/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA
Date: 11/01/2010 08:41 AM
Subject: response to Stan Meiburg's initial comments on WARRB draft 10.29 Premier Elkhorn ECP letter

(b) (5) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

-Eric

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----- Original Message -----

From: Stan Meiburg

Sent: 10/29/2010 06:50 PM EDT

To: Tom Welborn

Cc: Jim Giattina; Gwendolyn KeyesFleming

Subject: Re: Fw: WARRB comments on Premier Elkhorn ECP letter

(b) (5)

Stan

A. Stanley Meiburg
Deputy Regional Administrator
EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Margaret
Passmore/R3/USEPA/US

11/01/2010 12:40 PM

To Carrie Traver

cc

bcc

Subject Re: it's friday, it must be time for...Spruce References!

Here is

- Green, J., & Passmore, M. (1999). *Field survey report: an estimate of perennial stream miles in the area of the 1997 proposed Hobet Mining Spruce No. 1 Mine*. US Environmental Protection Agency. Wheeling, WV.



Green and Passmore 1999.pdf

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Greg Pond

Carrie--we will meet Monday and try to deal w/ t...

10/29/2010 04:45:16 PM

From: Greg Pond/R3/USEPA/US
To: Carrie Traver/R3/USEPA/US@EPA
Cc: David Rider/R3/USEPA/US@EPA, Frank Borsuk/R3/USEPA/US@EPA, Louis Reynolds/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA, Regina Poeske/R3/USEPA/US@EPA
Date: 10/29/2010 04:45 PM
Subject: Re: it's friday, it must be time for...Spruce References!

Carrie--we will meet Monday and try to deal w/ this first thing on Monday. Are you leaving for Charleston on Tuesday?

Greg Pond
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Carrie Traver

It was good to meet you Wheeling folks this we...

10/29/2010 04:41:08 PM

From: Carrie Traver/R3/USEPA/US
To: Greg Pond/R3/USEPA/US@EPA, Margaret Passmore/R3/USEPA/US@EPA, Frank Borsuk/R3/USEPA/US@EPA, Louis Reynolds/R3/USEPA/US@EPA
Cc: David Rider/R3/USEPA/US@EPA, Regina Poeske/R3/USEPA/US@EPA
Date: 10/29/2010 04:41 PM
Subject: it's friday, it must be time for...Spruce References!

It was good to meet you Wheeling folks this week! I hope to see you in WV sometime soon.

(b) (5)



Thanks for the response!

Carrie

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FIELD SURVEY REPORT

AN ESTIMATE OF PERENNIAL STREAM MILES
IN THE AREA OF THE 1997 PROPOSED
HOBET MINING SPRUCE NO. 1 MINE
(West Virginia Surface Mine Application # 5013-97)

Prepared By:
Jim Green
Maggie Passmore
USEPA Wheeling
July 1999

SUMMARY

On September 22-24, 1998, Jim Green and Maggie Passmore sampled several stream sites in the vicinity of the proposed Hobet Spruce No. 1 Mine (SMA 5013-97) in Logan County, West Virginia (note that this was the company's 1997 proposal). Valley fills were proposed for four watersheds in the permit application area. These watersheds are Seng Camp Creek, Pigeonroost Branch, Oldhouse Branch and White Oak Branch. All four streams are tributaries to Spruce Fork. Previous field work confirmed that these streams are in good to very good condition (Green and Passmore, 1998).

The purpose of the September 1998 field visit was to confirm the length of Type 1 and Type 2 perennial streams that would be buried by the proposed valley fills (see methods section for descriptions of Type 1 and Type 2 perennial streams). Previous estimates of perennial and intermittent stream losses have been based on USGS 1:24,000 topographic maps.

This study found approximately 6.3 miles of perennial Type 1 streams and 0.39 miles of perennial Type 2 streams which would be filled. Estimates from the USGS maps indicate only 0.9 miles are perennial. Every site in this survey that was intermittent in terms of flow at the time of the survey was found to be perennial according to the West Virginia Water Quality Standards definition, which also considers the stream biology. A total of 6.41 miles was not walked or sampled and was classified as "undetermined" in this report. It is probable that some of the "undetermined" length is also perennial. The "undetermined" stream reaches are upstream of the fills and in the areas that will be mined.

This study indicates three important findings. Designations of perennial or intermittent flow should be done on site rather than relying solely on the designations found on the USGS topographic maps. Secondly, streams that are intermittent in terms of flow may not meet the definition of "intermittent" in the West Virginia Water Quality Standards. Streams that are intermittent in terms of flow but support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months must be designated perennial under the West Virginia Water Quality Standards. Thirdly, essentially all of the stream reaches under the proposed fills are perennial, if you consider both flow and biology, in accordance with the State's Water Quality Standards definition.

METHODS

West Virginia Water Quality Standards defines intermittent streams as streams which have no flow during sustained periods of no precipitation and which do not support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. For this study, we defined two types of perennial streams, to reflect the West Virginia definition. We defined perennial Type 1 as streams that had continuous flow at the time of the field visit. We sampled these streams during the low flow period (September). We defined perennial Type 2 streams as the streams that had intermittent flow at the time of the visit, but

support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months.

We were able to identify the perennial Type 1 streams at the time of the field visit. In the intermittent stream reaches, we collected benthic macroinvertebrate samples which were later analyzed in the laboratory to determine whether they contained aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months.

We drove as far upstream in each watershed as possible. We then walked upstream until we reached a point where the stream was no longer flowing, or we were near or above the head of the fill. We noted the distance where the stream transitioned from continuous flow to intermittent flow and mapped the location on a USGS 1:24,000 topographic map. We later measured the distance from the toe of the proposed valley fill to the transition point on a USGS 1:24,000 topographic map with a map wheel. These distances were also checked using Maptech Terrain Navigator software. The sum of these distances determine the total number of perennial Type 1 miles that would be lost due to the valley fill and associated mining. These distances would be greater if they were measured from the toe of the sediment pond.

We collected benthic samples in the flowing portion of the stream using a 0.5 meter d-frame net. In reaches with sufficient flow, we composited 2 d-net samples. Although the benthic samples were not necessary to determine that the flowing portions were perennial, they were collected as supporting information on the stream condition.

In reaches that were intermittent, and the kick net could not be used, two biologists hand-picked organisms from the substrate for 10 minutes. The benthic samples were fixed with ethanol and transferred to the laboratory. The type of sampling used at each site is reported in Appendix A. The type of sampling affects the number of taxa found. More taxa are found at sites that are sampled with the kick net than at sites that were hand picked

The samples collected from sites with continuous flow were subsampled in the usual way. One-eighth of each sample was picked and identified. The samples hand picked at the sites with intermittent flow were picked entirely.

We determined the stream condition based on a qualitative assessment of the benthic samples. Since many of the samples were handpicked and we focused our picking on many of the larger organisms, we will not report richness, proportion, or tolerance metrics based on this small subsample. Instead, we determined the condition of the stream based largely on the presence of sensitive taxa including stoneflies, mayflies and caddisflies. Since we could not perform a multi-metric analysis, we designated the streams as simply good, fair or poor. In previous reports we were able to determine classes of very good and excellent based on a larger, more representative subsample (Green and Passmore 1998). We want to be clear that a designation of good in this report does not represent a degradation of conditions as reported in earlier reports. It simply indicates that our sampling for this report had a different objective (to

determine perennial or intermittent designation) and we therefore concentrated on collecting larger organisms rather than all organisms.

Organisms whose life history requires continuous flow for at least 6 months were identified from the literature. Organisms were identified to genus level to determine whether their life history requires residence in flowing waters for a continuous period of at least six (6) months. The presence of such organisms indicated that the stream reach was a perennial Type 2 reach. Many of the organisms collected in this survey do have life cycles greater than six months and require flowing water. The following is a list of selected organisms used to make the perennial Type 2 designations in this survey: Corydalidae (Nigronia), Pteronarcyidae, Peltoperlidae, Perlidae (Eccopectura and Acroneuria), Hydropsychidae (Diplectrona), and Psephenidae (Ectopria). These organisms all have life cycles of one year or greater. A stream reach cannot be classified as intermittent if these organisms are present.

In the event that a stream site was classified as a perennial Type 2 stream, we did not extrapolate this finding to upstream reaches. We classified the distances upstream of the sampling site as “undetermined” since we did not actually walk or sample the stream reach. However, it is probable that some additional length of streams that are in the “undetermined” category are, in fact, Type 2 perennial.

It should be noted that in some cases, we assessed stream reaches which were upstream of the head of the valley fills. These headwater stream reaches would also be destroyed by the proposed removal of overburden and mining of coal strata.

STREAM LOSSES ESTIMATED FROM USGS TOPOGRAPHIC MAPS

The USFWS recently estimated that a total of 469.3 miles of streams have been or will be filled by past and proposed valley fills in the West Virginia Department of Environmental Protection's (WV DEP's) Logan District (USFWS, 1998). These estimates are based on WV DEP's Cumulative Hydrologic Impact Assessment (CHIA) maps of Logan, Mingo, Boone, Lincoln, and Wayne Counties. The total estimate includes 29.2 miles of perennial streams, 340.5 miles of intermittent streams, and 99.6 miles of ephemeral streams.

Using a similar method, we estimated that approximately 0.9 miles of perennial, 9.6 miles of intermittent and 2.6 miles of ephemeral streams, or a total of 13.1 miles of streams, would be filled or otherwise destroyed by the proposed Hobet Spruce No. 1 Mine (see Table 1). We estimated perennial streams from the blue lines on a 1:24,000 USGS topographic map. Intermittent stream miles were measured by tracing the dotted blue lines. Ephemeral streams were measured as the stream channel from the most upstream extent of the intermittent stream line to the ridge top.

Table 1. Perennial and Intermittent Stream Losses Estimated From USGS 1:24,000 Topographic Maps.
Hobet Spruce No. 1 Mine

Stream Name	Perennial Miles	Intermittent Miles	Ephemeral Miles
Right Fork Seng Camp Creek	0	2.2	0.5
Pigeonroost Branch	0.9	3.3	1.0
Oldhouse Branch	0	1.1	0.5
White Oak Branch	0	3.0	0.6
Total Miles	0.9	9.6	2.6

PERENNIAL STREAM LOSSES ESTIMATED FROM FIELD VISIT

The September 1998 field visit to the Hobet Spruce No. 1 Mine indicated that over half of the 13.1 stream miles proposed to be filled are in fact, perennial. Perennial Type 1 streams could be determined at the time of the field work. Field biologists attempted to walk the length of the streams and tributaries to be filled and confirmed flowing water in approximately 6.3 miles of stream reaches. USGS topographic maps indicated only 0.9 miles of these same reaches were perennial (see Table 2).

Benthic samples collected from the reaches with confirmed intermittent flow were analyzed in the laboratory to determine whether benthic samples collected in those reaches contain aquatic life whose life history requires residence in flowing waters for a continuous period of at least 6 months. These streams were classified as perennial Type 2 streams. The total mileage of perennial Type 2 streams was 0.39 miles. A total of 6.41 miles was not walked or sampled and was classified as “undetermined”. It is probable that some portion of this stream length is also perennial. All of the sites that were sampled with intermittent flow were determined to be perennial based on the biology.

Table 2. Stream Losses Estimated From September 1998 Field Visit Hobet Spruce No. 1 Mine				
Stream Name	Perennial Type 1(miles)	Perennial Type 2 (miles)	Total Perennial Miles)	Undetermined (miles)
Right Fork Seng Camp Creek	1.1	0.30	1.40	1.3
Pigeonroost Branch	2.9	0.02	2.92	2.28
Oldhouse Branch	1.1	-	1.10	0.5
White Oak Branch	1.2	0.07	1.27	2.33
Total Miles	6.3	0.39	6.69	6.41

This analysis confirms that for some areas, the miles of perennial streams impacted by the mining operations will be underestimated by the 1:24,000 USGS topographic maps. This result can't be extrapolated to all areas in the coal fields as the extent of perennial or intermittent stream reaches will depend on site specific information, including the dip of the rocks, the type of geology, etc. This analysis also confirms that flow is not a good indication of whether streams are perennial or intermittent, as defined in the West Virginia water quality standards. The benthic macroinvertebrate assemblage must be considered to make a correct determination.

RIGHT FORK SENG CAMP CREEK

Many of the tributaries in these watersheds are unnamed. In order to describe locations for the sampling sites, we used the convention that unnamed tributaries were named as left or right forks looking downstream.

Station S1 is located on the named Right Fork of Seng Camp Creek approximately 1410 feet above the confluence with Seng Camp Creek. This site was sampled using a 0.5 meter-wide kick net. Twenty four (24) families were collected at this site, including fourteen (14) families in the stonefly, mayfly and caddisfly orders. Although some embeddedness was observed, the stream is in good condition at this point. The stream was flowing continuously at this site at the time of the visit. The distance between this site and the toe of the fill was designated as perennial Type 1.

Station S2 is located on the unnamed left fork of the Right Fork immediately upstream of the confluence with the Right Fork, approximately 3825 feet above the confluence with Seng Camp Creek (see map). This site was sampled using the 0.5 meter-wide kick net. Twenty three (23) families were collected at this site, including eleven (11) families in the stonefly, mayfly and caddisfly orders. The stream was flowing continuously at this point at the time of the field visit. Crayfish and salamanders were observed at this site. Although some embeddedness was observed at this location, the stream is in good condition. The distance from station S2 to station S1 was designated perennial Type 1.

Station S3 is located on the unnamed left fork upstream of station S2, approximately 1 mile above the confluence with Seng Camp Creek, and about 200 feet below the head of the fill. This site was sampled using the 0.5 meter-wide kick net. The stream was flowing intermittently at this point. The stream was also flowing intermittently in the unnamed right fork. After handpicking the right fork for several minutes, we determined that the benthic population was similar to that in the left fork. We collected a sample only from the left fork. Twelve (12) families were collected at this station including six (6) families in the stonefly, mayfly and caddisfly orders. The presence of several sensitive organisms indicates that the stream is in good condition at this point. An analysis of the benthic organisms indicates that the stream does support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. Therefore, the stream was designated as perennial Type 2 from station S3 to station S2.

Station S4 is located on the mainstem Right Fork, immediately upstream of the confluence with the unnamed left fork, and approximately 3529 feet above the confluence with Seng Camp Creek (see map). This site was sampled using the 0.5 meter-wide kick net. Twenty seven (27) families were collected at this station including sixteen (16) families in the stonefly, mayfly and caddisfly orders. The presence of several sensitive organisms indicates that the stream is in good condition at this point. The stream was flowing continuously at this site at the time of the visit. The flow and benthic organisms present at this site indicate a perennial stream

in good condition. The distance from station S4 to station S1 was designated as perennial Type 1.

Station S5 is located on the mainstem Right Fork approximately 1.1 miles from the confluence with Seng Camp Branch, upstream of S4, and about 600 feet above the head of the proposed fill. This site was sampled using the 0.5 meter-wide kick net. The stream was flowing continuously at this point and both forks upstream of S5 were also flowing continuously at the time of the field visit. Twenty three (23) families were collected at this station including fifteen (15) families in the stonefly, mayfly and caddisfly orders. The presence of several sensitive organisms indicates that the stream is in good condition at this point. The stream was determined to be perennial at the time of the field visit based on flow. The distance from station S5 to station S4 was designated as perennial Type 1.

Table 3. Station Locations on Right Fork Seng Camp Creek			
Station #	Location	Latitude Longitude	Type/ Condition
S1	Right Fork Seng Camp Creek 1410 feet upstream of confluence with Seng Camp Creek	37 53 53 81 47 26	Perennial Type I Good
S2	Unnamed left fork 3825 feet upstream of confluence with Seng Camp Creek	37 53 34 81 47 28	Perennial Type I Good
S3	Unnamed left fork of first unnamed left fork 1 mile upstream of confluence with Seng Camp Creek	37 53 26 81 47 39	Perennial Type 2 Good
S4	Mainstem Right fork 3529 feet upstream of confluence with Seng Camp Creek	37 53 32 81 47 20	Perennial Type 1 Good
S5	Mainstem Right fork 1.1 miles upstream of confluence with Seng Camp Creek	37 53 17 81 47 09	Perennial Type 1 Good

At the time of the field visit, 1.1 miles of stream were determined to be flowing continuously and were therefore designated as perennial Type 1 streams. An additional 0.3 miles of stream were flowing intermittently at the time of the field visit, but determined to be perennial Type 2 streams after analysis of the benthic community because they support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. A total of 1.3 miles were classified as undetermined, but it is probable that some of this length is also perennial.

Red efts, the sub-adult stage of the red-spotted newt, were abundant in the upper reaches of the Right Fork of Seng Camp Branch.

PIGEONROOST BRANCH

Three samples were collected in Pigeonroost Branch. Station P1 is located approximately 3.1 miles above the confluence with Spruce Fork on the middle fork (see map). This site was sampled by two biologists hand picking the rocks for ten minutes. This fork is perennial for its entire length and is fed by a spring. Eight (8) families were collected including six (6) families in the caddisfly and stonefly orders. Salamanders were abundant. Crayfish chimneys were present but no crayfish were collected. The presence of many intolerant organisms indicates the stream is in good condition. The distance from the toe of the fill to P1 was designated as perennial Type 1.

Station P2 is located approximately 2.5 miles above the confluence with Spruce Fork on the northern fork, and is about 850 feet below the head of the fill. This site was sampled by two biologists hand picking the rocks for ten minutes. This fork was intermittent in terms of flow at the time of the visit. Ten (10) families were collected including seven (7) families in the caddisfly, stonefly and mayfly orders. The presence of many sensitive organisms indicates a stream in good condition. An analysis of the benthic organisms indicates that the stream does support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. Therefore, the stream was designated as perennial Type 2 from the fork to station P2.

Station P3 is located on the southern fork, approximately 2.6 miles above the confluence with Spruce Fork and about 700 feet above the head of the fill. This site was sampled by two biologists hand picking the rocks for ten minutes. Eleven (11) families were collected including seven (7) families in the caddisfly, stonefly and mayfly orders. The stream is perennial in terms of flow at this site. The presence of several sensitive taxa indicates a stream in good condition. The distance from P3 to the fork downstream was designated as perennial Type 1.

Upstream of this station, the left fork (looking downstream at station P3) is dry. The right fork (looking downstream at station P3) was intermittent in terms of flow at the time of the visit and was completely dry 950 feet above the confluence with the left fork.

At the time of the field visit, 2.9 miles of stream were determined to be flowing continuously and were therefore designated as perennial Type 1 streams. An additional 0.02 miles of stream were flowing intermittently at the time of the field visit, but determined to be a perennial Type 2 reach after analysis of the benthic community because they support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. A total of 2.28 miles were classified as undetermined, but it is probable that some of this length is also perennial.

Table 4. Station Locations on Pigeonroost Branch			
Station #	Location	Latitude Longitude	Type/ Condition
P1	Middle fork 3.1 miles upstream of confluence with Spruce Fork	37 52 10 81 47 08	Perennial Type I Good
P2	Northern fork 2.5 miles upstream of confluence with Spruce Fork	37 52 41 81 47 11	Perennial Type 2 Good
P3	Southern fork 2.6 miles upstream of confluence with Spruce Fork	37 52 13 81 47 43	Perennial Type I Good

OLDHOUSE BRANCH

Two stations were sampled on Oldhouse Branch. Station O1 was located approximately 1.1 miles upstream of the confluence with Spruce Fork. The stream at this location was perennial in terms of flow. This site was sampled by two biologists hand picking the rocks for ten minutes. Fourteen (14) families were collected at this location including eleven (11) families in the sensitive caddisfly, mayfly and stonefly orders. The stream was determined to be perennial and in good condition at this location. The distance from station O1 to the toe of the fill was designated as perennial Type 1.

Station O2 was located approximately 1.4 miles upstream of the confluence with Spruce Fork, and at the head of the fill. The stream was determined to be perennial at 1.45 miles above the confluence with Spruce Fork. At that point, the stream channel was impassable because of fallen trees and brush. This site was sampled by two biologists hand picking the rocks for ten minutes. Eleven (11) families were collected at this location including six (6) families in the sensitive caddisfly, mayfly and stonefly orders. The stream was determined to be perennial and in good condition at this location. The distance from station O2 to station O1 was designated as perennial Type 1.

The entire length of Oldhouse Branch that could be walked (1.1 miles as measured from the location of toe of fill) was classified as perennial Type 1 based on the continuous flow during the time of the visit. This tributary had very good pool development for a small stream.

Table 5. Station Locations on Oldhouse Branch			
Station #	Location	Latitude Longitude	Type/ Condition
O1	Oldhouse Branch 1.1 miles upstream of confluence with Spruce Fork	37 52 18 81 48 45	Perennial Type I Good
O2	Oldhouse Branch 1.4 miles upstream of confluence with Spruce Fork	37 52 24 81 48 29	Perennial Type I Good

WHITE OAK BRANCH

Two samples were collected on White Oak Branch. Both stations were about 700 feet above the head of the fill. Station W1 was located approximately 1.6 miles upstream of the confluence with Spruce Fork on the left fork (looking downstream). This fork was intermittent in terms of flow at this point. This site was sampled by two biologists hand picking the rocks for ten minutes. Ten (10) families were collected at this site including six (6) families in the sensitive caddisfly, stonefly and mayfly orders. Salamanders were also observed at this site. The benthic community indicates a stream in good condition. An analysis of the benthic organisms indicates that the stream does support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. Therefore, the stream was designated as perennial Type 2 from the fork to station W1. White Oak Branch was flowing continuously downstream of the fork.

Station W2 was located 1.6 miles upstream of the confluence with Spruce Fork on the right fork (looking downstream). The stream was intermittent at this location in terms of flow.

This site was sampled by two biologists hand picking the rocks for ten minutes. Ten (10) families were collected at this site including six (6) families in the sensitive caddisfly, mayfly and stonefly orders. An analysis of the benthic organisms indicates that the stream does support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. Therefore, the stream was designated as perennial Type 2 from the fork to station W2. The stream was completely dry 67 meters upstream of the fork on the right fork.

Table 6. Station Locations on White Oak Branch			
Station #	Location	Latitude Longitude	Type/ Condition
W1	Unnamed left fork of upstream fork 1.6 miles upstream of confluence with Spruce Fork	37 51 32 81 47 07	Perennial Type 2 Good
W2	Unnamed right fork of upstream fork 1.6 miles upstream of confluence with Spruce Fork	37 51 34 81 47 06	Perennial Type 2 Good

At the time of the field visit, 1.2 miles of stream were determined to be flowing continuously and were therefore designated as perennial Type 1 streams. An additional 0.07 miles of stream were flowing intermittently at the time of the field visit, but determined to be perennial Type 2 streams after analysis of the benthic community because they support aquatic

life whose life history requires residence in flowing waters for a continuous period of at least six (6) months. A total of 2.33 miles were classified as undetermined, but it is probable that some of this length is also perennial.

APPENDIX A. MACROINVERTEBRATE TAXONOMIC LISTS

Station #: S1 Location: Right Fork Seng Camp Creek, 1410 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Diptera	
Chironomidae	35
Ceratopogonidae	5
Tipulidae	3
Empididae	1
Trichoptera	
Hydropsychidae	
Diplectrona	2
Hydropsyche	56
Cheumatopsyche	225
Philopotamidae	
Chimarra	3
Polycentropodidae	
Polycentropus	3
Hydroptilidae	
Hydroptila	17
Plecoptera	
Perlidae	
Eccoptura	8
Chloroperlidae	
Haploperla	1
Capniidae	

Station #: S1 Location: Right Fork Seng Camp Creek, 1410 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Paracapnia	2
Ephemeroptera	
Baetiscidae	
Baetisca	61
Ephemeridae	
Ephemera	196
Oligoneuriidae	
Isonychia	107
Heptageniidae	
Stenonema	167
Baetidae	35
Ephemerellidae	11
Caenidae	2
Odonate	
Gomphidae	
Lanthus	14
Coleoptera	
Elmidae (larvae)	48
Elmidae (adult)	25
Psephenidae	
Psephenus	8
Dryopidae (adult)	2
Megaloptera	

Station #: S1 Location: Right Fork Seng Camp Creek, 1410 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Corydalidae	
Corydalus	20
Oligochaeta	3

Station #: S2 Location: Unnamed left fork, 3825 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Diptera	
Chironomidae	33
Ceratopogonidae	3
Tipulidae	6
Empididae	1
Tabanidae	1
Dixidae	1
Trichoptera	
Hydropsychidae	
Diplectrona	251
Hydropsyche	6
Polycentropodidae	
Polycentropus	5
Rhyacophilidae	
Rhyacophila	1
Limnephilidae	2
Plecoptera	
Peltoperlidae	
Peltoperla	32
Perlodidae	7
Diploperla	4
Chloroperlidae	
Haploperla	2

Station #: S2 Location: Unnamed left fork, 3825 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Leuctridae	
Leuctra	82
Perlidae	2
Ephemeroptera	
Ephemeridae	
Ephemera	1
Heptageniidae	1
Odonate	
Aeshnidae	1
Coleoptera	
Elmidae (larvae)	5
Hydrophilidae	1
Megaloptera	
Corydalidae	
Nigronia	4
Crustacea	
Cambaridae	4
Oligochaeta	2

Station #: S3 Location: Unnamed left fork of 1st unnamed left fork, 1 mile upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Diptera	
Chironomidae (larvae)	8
Chironomidae (pupae)	1
Dixidae	
Dixa	3
Tipulidae	6
Tabanidae	1
Trichoptera	
Hydropsychidae	69
Diplectrona metaqui	39
Diplectrona sp.	6
Rhyacophilidae	
Rhyacophila	1
Limnephilidae (pupae)	14
Hydroptilidae	
Leucotrichia	1
Plecoptera	11
Peltoperlidae	
Peltoperla	60
Leuctridae	
Leuctra	93
Megaloptera	
Corydalidae	

Station #: S3 Location: Unnamed left fork of 1st unnamed left fork, 1 mile upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Nigronia	1
Crustacea	
Cambaridae	1
Collembola	3

Station #: S4 Location: Mainstem Right Fork, 3529 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Diptera	
Chironomidae	103
Ceratopogonidae	6
Tipulidae	34
Dixidae	3
Trichoptera	
Hydropsychidae	
Diplectrona	408
Hydropsyche	18
Polycentropodidae	
Polycentropus	8
Rhyacophilidae	
Rhyacophila	2
Lepidostomatidae	1
Philopotamidae	13
Plecoptera	
Peltoperlidae	
Peltoperla	15
Perlodidae	21
Diploperla	6
Perlidae	23
Perlesta	6
Eccoptura	2

Station #: S4 Location: Mainstem Right Fork, 3529 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Pteronarcyidae	
Pteronarcys	1
Leuctridae	
Leuctra	165
Paraleuctra	4
Capniidae	
Paracapnia	21
Chloroperlidae	
Haploperla	4
Ephemeroptera	
Heptageniidae	2
Stenonema	53
Baetidae	
Baetis	14
Leptophlebiidae	6
Ephemeridae	
Ephemera	4
Odonate	
Gomphidae	1
Lanthus	13
Coleoptera	
Elmidae (larvae)	25
Elmidae (adult)	2

Station #: S4 Location: Mainstem Right Fork, 3529 feet upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Psephenidae	
Ectopria	33
Megaloptera	
Corydalidae	
Nigronia	1
Crustacea	
Cambariadae	2
Oligochaeta	7
Collembola	1

Station #: S5 Location: Mainstem Right Fork, 1.1 miles upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Diptera	
Chironomidae	27
Ceratopogonidae	3
Tipulidae	5
Dixidae	4
Trichoptera	
Hydropsychidae	75
Diplectrona	67
Hydropsyche	10
Polycentropodidae	
Polycentropus	8
Rhyacophilidae	
Rhyacophila	11
Limnephilidae (pupae)	1
Glossosomatidae (pupae)	1
Glossosoma	1
Philopotamidae	2
Philopotamidae (pupae)	1
Plecoptera	
Peltoperlidae	
Peltoperla	9
Perlodidae	45
Diploperla	19

Station #: S5 Location: Mainstem Right Fork, 1.1 miles upstream of confluence with Seng Camp Creek Date Sampled: 9/22/98 Type of Sampler: 0.5 meter kick net	
Organisms	Abundance
Chloroperlidae	22
Perlidae	
Eccoptura	2
Leuctridae	27
Ephemeroptera	
Heptageniidae	
Stenacron	1
Stenonema	34
Baetidae	19
Leptophlebiidae	19
Ephemerellidae	3
Odonate	
Libellulidae	1
Coleoptera	
Elmidae (larvae)	3
Psephenidae	55
Collembola	1

Station #: P1 Location: Middle Fork of Pegeonroost Branch, 3.1 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Trichoptera	
Hydropsychidae	2
Diplectrona	8
Rhyacophilidae	
Rhyacophila	1
Limnephilidae (pupae)	4
Plecoptera	
Peltoperlidae	
Peltoperla	6
Perlodidae	
Diploperla	4
Chloroperlidae	1
Coleoptera	
Psephenidae	
Ectopria	1
Crustacea	
Isopoda	4
Collembola	2

Station #: P2 Location: Northern Fork Pigeonroost Branch, 2.5 upstream of confluence with Spruce Fork Date Sampled: 9/22/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Trichoptera	
Hydropsychidae	
Diplectrona	3
Psychomiidae	
Lype	1
Plecoptera	
Peltoperlidae	
Peltoperla	7
Perlodidae	
Diploperla	3
Chloroperlidae	
Perlidae	
Eccoptura	1
Ephemeroptera	
Heptageniidae	
Stenonema	1
Coleoptera	
Psephenidae	
Ectopria	4
Megaloptera	
Corydalidae	
Nigronia	1
Crustacea	
Cambaridae	3

Station #: P3 Location: Southern Fork of Pigeonroost Branch, 2.6 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Diptera	
Tipulidae	1
Dixidae	1
Trichoptera	
Hydropsychidae	3
Diplectrona	7
Hydropsyche	3
Philopotamidae	
Dolophilodes	1
Plecoptera	
Peltoperlidae	
Peltoperla	6
Perlodidae	
Diploperla	3
Chloroperlidae	
Sweltsa	1
Ephemeroptera	
Heptageniidae	
Stenonema	4
Ephemerellidae	
Eurylophella	1
Coleoptera	
Psephenidae	

Station #: P3 Location: Southern Fork of Pigeonroost Branch, 2.6 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Ectopria	19
Turbellaria	1

Station #: O1 Location: Oldhouse Branch, 1.1 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Diptera	
Chironomidae	1
Trichoptera	
Hydropsychidae	
Diplectrona	10
Hydropsyche	9
Philopotamidae	
Dolophilodes	1
Glossosomatidae (pupae)	1
Glossosoma	2
Limnephilidae (pupae)	11
Uenoidae	
Neophylax	1
Plecoptera	
Peltoperlidae	
Peltoperla	1
Perlodidae	
Diploperla	1
Pteronarcyidae	
Pteronarcys	7
Perlidae	1
Acroneuria	1
Ephemeroptera	

Station #: O1 Location: Oldhouse Branch, 1.1 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Heptageniidae	
Stenonema	2
Leptophlebiidae	1
Coleoptera	
Psephenidae	
Psephenus	9
Ectopria	2
Megaloptera	
Corydalidae	
Nigronia	1

Station #: O2 Location: Oldhouse Branch, 1.4 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Diptera	
Tipulidae	2
Dixidae	
Dixa	1
Trichoptera	
Hydropsychidae	
Diplectrona	7
Hydropsyche	2
Polycentropodidae	
Nereclipsis	1
Limnephilidae (pupae)	10
Plecoptera	
Peltoperlidae	
Peltoperla	1
Perlidae	
Acroneuria	3
Eccoptura	3
Beloneuria	1
Ephemeroptera	
Heptageniidae	
Stenonema	9
Stenacron	1
Coleoptera	

Station #: O2 Location: Oldhouse Branch, 1.4 miles upstream of confluence with Spruce Fork Date Sampled: 9/24/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Psephenidae	
Ectopria	14
Megaloptera	
Corydalidae	
Nigronia	1
Crustacea	
Cambaridae	1

Station #: W1 Location: White Oak Branch, Unnamed left fork of upstream fork, 1.6 miles upstream of confluence with Spruce Fork Date Sampled: 9/23/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Diptera	
Chironomidae	1
Tipulidae	1
Trichoptera	
Hydropsychidae	
Diplectrona	4
Hydropsyche	1
Polycentropodidae	
Polycentropus	1
Limnephilidae (pupae)	1
Plecoptera	
Peltoperlidae	
Peltoperla	3
Pteronarcyidae	2
Ephemeroptera	
Heptageniidae	
Stenonema	8
Coleoptera	
Psephenidae	
Ectopria	16
Crustacea	
Cambaridae	1

Station #: W2 Location: White Oak Branch, unnamed right fork of upstream fork, 1.6 miles upstream of confluence with Spruce Fork Date Sampled: 9/23/98 Type of Sampler: Hand Picked	
Organisms	Abundance
Diptera	
Chironomidae	2
Tipulidae	1
Trichoptera	
Hydropsychidae	4
Diplectrona	5
Hydropsyche	1
Limnephilidae (pupae)	3
Plecoptera	
Peltoperlidae	
Peltoperla	3
Perlidae	
Acroneuria	3
Pteronarcyidae	3
Ephemeroptera	
Heptageniidae	
Stenonema	1
Coleoptera	
Psephenidae	
Ectopria	8
Crustacea	
Cambaridae	2

REFERENCES

Green, J. and M. Passmore. 1998. A Survey of Aquatic Life In Streams in the Area of the Proposed Hobet Mining Spruce #1 Mine. United States Environmental Protection Agency, Region III, Wheeling, WV.

USFWS. 1998. Permitted Stream Losses Due to Valley Filling in Kentucky, Pennsylvania, Virginia, and West Virginia: A Partial Inventory. Kentucky/Tennessee, Pennsylvania, Southwestern Virginia, and West Virginia Ecological Services Field Offices, United States Fish and Wildlife Service, Department of the Interior, State College, PA.

Matthew
Klasen/DC/USEPA/US
11/01/2010 01:17 PM

To Gregory Peck
cc
bcc
Subject Re: WARRB comments on Premier Elkhorn ECP letter

Here are my thoughts on this -- just editing the letter itself (first 8 pages) and not editing the rest. I'll take a shot at editing the adaptive management plan shortly.

Still needs a lot of work. (b) (5)

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

PremElk 898-0800 ltr_11.1.10 v2 - mk.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Timothy Landers Matt, Greg, et al: Attached for OW attention is th... 11/01/2010 11:27:00 AM

From: Timothy Landers/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA
Cc: Jennifer Derby/R4/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Brian Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA
Date: 11/01/2010 11:27 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Matt, Greg, et al:

Attached for OW attention is the draft final Premier Elkhorn letter. This updates the Region's version that was sent out by Chris H Fri evening, and reflects review and comment by WARRB, OWM, OFA, and R4 staff. Please let Eric and I know if you have any questions as this letter moves up the chain. Thanks for your help.

[attachment "PremElk 898-0800 ltr_11.1.10 v2.doc" deleted by Matthew Klasen/DC/USEPA/US]

Gregory Peck OW will review Tim's next version and coordinat... 11/01/2010 10:11:49 AM

From: Gregory Peck/DC/USEPA/US
To: Tom Welborn/R4/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, "Tim Landers" <Landers.Timothy@epa.gov>, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Timothy

Landers/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/01/2010 10:11 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

OW will review Tim's next version and coordinate with OGC and OA.

Thanks

Tom Welborn Please add Jennifer Derby to email list since she... 11/01/2010 09:42:36 AM

From: Tom Welborn/R4/USEPA/US
To: Timothy Landers/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, "Tim Landers" <Landers.Timothy@epa.gov>, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA
Date: 11/01/2010 09:42 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Please add Jennifer Derby to email list since she will be acting for me today and pushing the ltr out this afternoon. Thanks.

Sent by EPA Wireless E-Mail Services

Timothy Landers

----- Original Message -----

From: Timothy Landers
Sent: 11/01/2010 09:34 AM EDT
To: Cliff Rader
Cc: David Evans; Duncan Powell; Eric Somerville; Gregory Peck; Christopher Hunter; landers.timothy@epa.gov; Matthew Klasen; MichaelG Lee; Tom Welborn; Js Wilson
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Thanks Cliff. Just talked to Eric S. We'll make this change and send around momentarily a draft final version that incorporates not only that, but also additional R4 language addressing some of the clarifications Chris sought in Friday's draft.

Cliff Rader On slight edit (b) (5) 11/01/2010 09:23:56 AM

From: Cliff Rader/DC/USEPA/US
To: Hunter.Christopher@epamail.epa.gov
Cc: David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA
Date: 11/01/2010 09:23 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

On slight edit (b) (5)

Christopher Hunter Attached are a clean and redline version of WA... 10/29/2010 05:37:33 PM

From: Christopher Hunter/DC/USEPA/US
To: landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Cliff

Date: Rader/DC/USEPA/US@EPA
10/29/2010 05:37 PM
Subject: WARRB comments on Premier Elkhorn ECP letter

Attached are a clean and redline version of WARRB's recommended edits. OGC and OW have yet to review, but I'm cc'ing Region 4 to give them a sense of the direction.

Thanks,
Chris

[attachment "clean draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc" deleted by Cliff
Rader/DC/USEPA/US] [attachment "draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc" deleted by Cliff
Rader/DC/USEPA/US]

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

"Sherman, Peter"
<Peter.Sherman@tetrattech.com>

11/01/2010 02:07 PM

To Sharmin Syed

cc

bcc

Subject Draft MD Mining PQR Addendum

1 attachment



ATTACHMENT REDACTED - DELIBERATIVE

MD Mining PQR Addendum Draft 11_1_2010.docx

Sharmin,

Attached is the draft MD mining PQR report, written as an addendum to the initial mining PQR report. Please note:

- For this draft recommendations are included as part of the draft. These can be removed and made their own document for distribution to the Region and State (although the context provided by the report supports the recommendations).
- The program overview table is not included (it seems to have optimum value for comparing several state programs).
- We do not have copies of two permits (previously requested and noted in the appendix).

See what you think of this format. PA should be complete soon.

Peter

Peter Sherman | Environmental Staff Attorney

Direct: 703.385.6000 x422 | Fax: 703.385.6007

peter.shermanl@tetrattech-ffx.com

Tetra Tech | Complex World, Clear Solutions

10306 Eaton Place, Suite 340 | Fairfax, VA 22030-2201 | www.ttwater.com

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Matthew
Klasen/DC/USEPA/US
11/01/2010 02:30 PM

To Timothy Landers
cc
bcc
Subject Fw: EPA Comments on the Stream Protection Rule

FYI -- we'll see if they're OK with this. We mentioned this to Nancy this morning.

mk

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 11/01/2010 02:30 PM -----

From: Gregory Peck/DC/USEPA/US
To: Nancy Stoner/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA
Cc: Denise Keehner/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/01/2010 02:22 PM
Subject: EPA Comments on the Stream Protection Rule

Nancy/Bob:

(b) (5)

A large rectangular area of the email body is completely redacted with black ink. The redaction covers approximately 80% of the page content below the header and above the footer. The text "(b) (5)" is written in red at the top left of this redacted area.

Thanks,

Greg



ATTACHMENT REDACTED - DELIBERATIVE

Surface and General SPR Text 10-27-10 EPA ed.docx

Matthew
Klasen/DC/USEPA/US
11/01/2010 03:40 PM

To Gregory Peck
cc
bcc
Subject Fw: WARRB comments on Premier Elkhorn ECP letter

Have you looked at my edits yet -- if not, I can add Mike's edits to that version and send it to you.

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 11/01/2010 03:40 PM -----

From: MichaelG Lee/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA
Date: 11/01/2010 03:26 PM
Subject: WARRB comments on Premier Elkhorn ECP letter

OK, here are my comments/edits. Let me know if you'd like to discuss them. I also looked at the enclosures, but very quickly. How far up will this be elevated?



xxx1.doc

ATTACHMENT REDACTED - DELIBERATIVE

Mike

Michael G. Lee
Office of General Counsel
(202) 564-5486

Matthew Klasen

[Send them to me, and I'll incorporate within the v...](#)

11/01/2010 11:51:47 AM

From: Matthew Klasen/DC/USEPA/US
To: MichaelG Lee/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA
Date: 11/01/2010 11:51 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Send them to me, and I'll incorporate within the version I'm reviewing, which I'm planning to send to Greg shortly.

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

MichaelG Lee [Sorry to be lagging a bit, I've been stuck with a...](#) 11/01/2010 11:47:14 AM

From: MichaelG Lee/DC/USEPA/US
To: Timothy Landers/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA
Date: 11/01/2010 11:47 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Sorry to be lagging a bit, I've been stuck with a Gulf-related matter. I'm about halfway through the letter (Friday's version w/ Chris's edits) and I hope to send my comments around shortly. Who's got the lead on this now?

Mike

Michael G. Lee
Office of General Counsel
(202) 564-5486

Timothy Landers [Matt, Greg, et al: Attached for OW attention is th...](#) 11/01/2010 11:27:00 AM

From: Timothy Landers/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA
Cc: Jennifer Derby/R4/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Brian Frazer/DC/USEPA/US@EPA, Brian Topping/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Kevin Minoli/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA
Date: 11/01/2010 11:27 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Matt, Greg, et al:
Attached for OW attention is the draft final Premier Elkhorn letter. This updates the Region's version that was sent out by Chris H Fri evening, and reflects review and comment by WARRB, OWM, OFA, and R4 staff. Please let Eric and I know if you have any questions as this letter moves up the chain. Thanks for your help.

[attachment "PremElk 898-0800 ltr_11.1.10 v2.doc" deleted by MichaelG Lee/DC/USEPA/US]

Gregory Peck [OW will review Tim's next version and coordinat...](#) 11/01/2010 10:11:49 AM

From: Gregory Peck/DC/USEPA/US

To: Tom Welborn/R4/USEPA/US@EPA
Cc: Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, "Tim Landers" <Landers.Timothy@epa.gov>, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/01/2010 10:11 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

OW will review Tim's next version and coordinate with OGC and OA.

Thanks

Tom Welborn Please add Jennifer Derby to email list since she... 11/01/2010 09:42:36 AM

From: Tom Welborn/R4/USEPA/US
To: Timothy Landers/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, "Tim Landers" <Landers.Timothy@epa.gov>, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, Jennifer Derby/R4/USEPA/US@EPA
Date: 11/01/2010 09:42 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Please add Jennifer Derby to email list since she will be acting for me today and pushing the ltr out this afternoon. Thanks.

Sent by EPA Wireless E-Mail Services

Timothy Landers

----- Original Message -----

From: Timothy Landers
Sent: 11/01/2010 09:34 AM EDT
To: Cliff Rader
Cc: David Evans; Duncan Powell; Eric Somerville; Gregory Peck; Christopher Hunter; landers.timothy@epa.gov; Matthew Klasen; MichaelG Lee; Tom Welborn; Js Wilson
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

Thanks Cliff. Just talked to Eric S. We'll make this change and send around momentarily a draft final version that incorporates not only that, but also additional R4 language addressing some of the clarifications Chris sought in Friday's draft.

Cliff Rader On slight edit (b) (5) ... 11/01/2010 09:23:56 AM

From: Cliff Rader/DC/USEPA/US
To: Hunter.Christopher@epamail.epa.gov
Cc: David Evans/DC/USEPA/US@EPA, Duncan Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA
Date: 11/01/2010 09:23 AM
Subject: Re: WARRB comments on Premier Elkhorn ECP letter

On slight edit (b) (5)

Christopher Hunter Attached are a clean and redline version of WA... 10/29/2010 05:37:33 PM

From: Christopher Hunter/DC/USEPA/US
To: landers.timothy@epa.gov, Matthew Klasen/DC/USEPA/US@EPA, MichaelG
Lee/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA
Cc: David Evans/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Duncan
Powell/R4/USEPA/US@EPA, Eric Somerville/R4/USEPA/US@EPA, Cliff
Rader/DC/USEPA/US@EPA
Date: 10/29/2010 05:37 PM
Subject: WARRB comments on Premier Elkhorn ECP letter

Attached are a clean and redline version of WARRB's recommended edits. OGC and OW have yet to review, but I'm cc'ing Region 4 to give them a sense of the direction.

Thanks,

Chris

[attachment "clean draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc" deleted by Cliff
Rader/DC/USEPA/US] [attachment "draft PremElk 898-0800 ltr_10.29.10 - WARRB.doc" deleted by Cliff
Rader/DC/USEPA/US]

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

**Matthew
Klasen/DC/USEPA/US**
11/02/2010 08:28 AM

To Timothy Landers
cc
bcc
Subject Re: CEQ Interagency MTM Staff-Level Call (still waiting on
call-in # at 8:45

Greg was reviewing last night and I think he's going to continue first thing this morning. (Attached are the proposed edits I passed along to Greg, but I wouldn't send to R4 just yet.)

I'll try to get things moving quickly, and I realize the urgency.

mk



ATTACHMENT REDACTED - DELIBERATIVE

PremElk 898-0800 ltr_11.1.10 v2 - mk.doc

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Timothy Landers

Thanks Matt. On another front, do you know wh...

11/02/2010 08:23:52 AM

From: Timothy Landers/DC/USEPA/US
To: Matthew Klasen/DC/USEPA/US@EPA
Date: 11/02/2010 08:23 AM
Subject: Re: CEQ Interagency MTM Staff-Level Call (still waiting on call-in # at 8:45

Thanks Matt. On another front, do you know what the current status of review is on the draft Prem Elk letter?

Matthew Klasen

I emailed Lauren this morning to ask; hopefully it...

11/02/2010 08:12:35 AM

From: Matthew Klasen/DC/USEPA/US
To: Brian Topping/DC/USEPA/US@EPA, Christopher Hunter/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, Js Wilson/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Sharmin Syed/DC/USEPA/US@EPA, Timothy Landers/DC/USEPA/US@EPA
Date: 11/02/2010 08:12 AM
Subject: CEQ Interagency MTM Staff-Level Call (still waiting on call-in # at 8:45

I emailed Lauren this morning to ask; hopefully it comes through before 8:45 (otherwise, we'll have an hour of our lives back).

mk

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780

cell (202) 380-7229

Mark Douglas/R3/USEPA/US

11/02/2010 09:47 AM

To Gregory Gies, Jessica Martinsen

cc

bcc

Subject Ison Rock



Letter to Evelyn MacKnight Concerning A G Coal 9-3-10.doc



1003841 AG Ison Rock CSMO_NPDES Draft Factsheet 9_3_10.pdf



1003841 AG CSMO_NPDES Draft Permit final I 9_3_10.pdf

Mark Douglas
Environmental Assessment and Innovation Division
US EPA Region 3
3EA30
1650 Arch St
Philadelphia, PA 19103
215-814-2767

ATTACHMENTS REDACTED -
DELIBERATIVE

Matthew
Klasen/DC/USEPA/US
11/02/2010 10:00 AM

To Gregory Peck
cc Timothy Landers
bcc
Subject Re: Draft note to Sterling re: SPR comments

And here are the comments themselves.

mk



ATTACHMENT REDACTED - DELIBERATIVE

Surface and General SPR Text 10-27-10 EPA ed.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

Matthew Klasen

[Hi Greg, Now that Bob and Nancy are OK sendi...](#)

11/02/2010 09:55:50 AM

From: Matthew Klasen/DC/USEPA/US
To: Gregory Peck/DC/USEPA/US@EPA
Cc: Timothy Landers/DC/USEPA/US@EPA
Date: 11/02/2010 09:55 AM
Subject: Draft note to Sterling re: SPR comments

Hi Greg,

Now that Bob and Nancy are OK sending comments along, here's a draft note to Sterling Rideout that would attach our stream protection rule comments, which I've attached below. Are you OK sending these along, or do you want Tim or I to send?

Thanks,
Matt

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

(b) (5)

(b) (5) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

To Gregory Peck
cc Timothy Landers
bcc
Subject Re: Draft note to Sterling re: SPR comments

Thanks,
Matt

Matthew Klasen	Hi Greg, Now that Bob and Nancy are OK sendi...	11/02/2010 09:55:50 AM
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(b) (5)

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(b) (5)

[REDACTED]

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ATTACHMENT REDACTED - DELIBERATIVE

Surface and General SPR Text 10-27-10 EPA ed.docx

Matthew
Klasen/DC/USEPA/US
11/02/2010 11:53 AM

To Timothy Landers, Christopher Hunter
cc
bcc
Subject Fw: Final Draft Elkhorn Comment Letter (Track Changes for
clarity for the bigger group)

Tim and Chris:

I just made a Track Changes version of this so everyone's aware of what's different. It's attached.

Feel free to send the clean and track changes versions to the appropriate folks in R4 so they know what's changed -- but I wouldn't forward Greg's email itself.

I can probably help explain the rationale for some of these edits if folks have questions.

Thanks,
Matt



ATTACHMENT REDACTED - DELIBERATIVE

Track Changes Elkhorn.docx

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 11/02/2010 11:51 AM -----

From: Gregory Peck/DC/USEPA/US
To: Nancy Stoner/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA
Cc: Matthew Klasen/DC/USEPA/US@EPA, MichaelG Lee/DC/USEPA/US@EPA, Christopher
Hunter/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/02/2010 11:49 AM
Subject: Final Draft Elkhorn Comment Letter

Nancy/Bob

(b) (5)

A large rectangular area of the email body is completely redacted with a solid black box. The redaction covers the majority of the message content following the header information.

Let us know if you have questions. The 15 day extension of the ECP process expires today.

Greg



ATTACHMENT REDACTED - DELIBERATIVE

Mining Elkhorn HQ Comments NOV 2 10.doc

Christopher
Hunter/DC/USEPA/US

11/02/2010 12:10 PM

To Rose Kwok

cc

bcc

Subject Fw: Slightly Revised R3 Cumulative Impacts Powerpoint

And a brief outline on R3's cumulative effects work, which includes human health

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454
hunter.christopher@epa.gov

----- Forwarded by Christopher Hunter/DC/USEPA/US on 11/02/2010 12:10 PM -----

From: Cliff Rader/DC/USEPA/US
To: Matt Bogoshian/DC/USEPA/US@EPA, Nancy Stoner/DC/USEPA/US@EPA, Tom Welborn/R4/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA, Cliff Rader/DC/USEPA/US@EPA, Denise Keehner/DC/USEPA/US@EPA, Gregory Peck/DC/USEPA/US@EPA, Heinz Mueller/R4/USEPA/US@EPA, Jim Giattina/R4/USEPA/US@EPA, John Pomponio/R3/USEPA/US@EPA, Cynthia Giles-AA/DC/USEPA/US@EPA, Susan Bromm/DC/USEPA/US@EPA, Robert Hargrove/DC/USEPA/US@EPA, Ann Campbell/DC/USEPA/US@EPA, Matthew Klasen/DC/USEPA/US@EPA, Hunter.Christopher@epamail.epa.gov, Kuray.Marilyn@epamail.epa.gov
Date: 06/17/2010 11:17 AM
Subject: Slightly Revised R3 Cumulative Impacts Powerpoint

Region 3 asked that I send this out; there are some slight changes from last night's version.

We will also bring several copies to the meeting this afternoon.



ATTACHMENT REDACTED - DELIBERATIVE

MTMCUMreg3efforts6162010.ppt

**Timothy
Landers/DC/USEPA/US**

11/02/2010 12:10 PM

To Eric Somerville, Duncan Powell, Tom Welborn

cc Christopher Hunter, David Evans, Brian Frazer

bcc

Subject Final Draft Premier Elkhorn Letter

Eric, Tom, Duncan:

Attached for your review and communication within the Region is the revised ECP comment letter which now reflects input from OW and OGC. Included below are a clean version, and redline version, so you can distinguish any changes over yesterday's draft. This letter was shared moments ago with Bob S for his input as well. Please distribute accordingly and let us know if there are any remaining issues as you see it. Thanks for your coordination on this.



Mining Elkhorn HQ Comments NOV 2 10.doc Track Changes Elkhorn.docx

ATTACHMENT REDACTED - DELIBERATIVE

Timothy
Landers/DC/USEPA/US

11/02/2010 01:06 PM

To Ross Geredien, Brian Frazer, Christopher Hunter, David
Evans

cc

bcc

Subject Fw: EPA comments on updated stream protection rule text

Final stream protection rule comments did go over to OSM today. Good news, doesn't appear that the substance of these consolidated comments changed any over what we sent up last week.

----- Forwarded by Timothy Landers/DC/USEPA/US on 11/02/2010 01:03 PM -----

From: Matthew Klasen/DC/USEPA/US
To: Timothy Landers/DC/USEPA/US@EPA
Date: 11/02/2010 12:04 PM
Subject: Fw: EPA comments on updated stream protection rule text

FYI

Matt Klasen
U.S. Environmental Protection Agency
Office of Water (IO)
202-566-0780
cell (202) 380-7229

----- Forwarded by Matthew Klasen/DC/USEPA/US on 11/02/2010 12:04 PM -----

From: Gregory Peck/DC/USEPA/US
To: srideout@osmre.gov
Cc: drice@osmre.gov, Nancy Stoner/DC/USEPA/US@EPA, Bob Sussman/DC/USEPA/US@EPA,
Matthew Klasen/DC/USEPA/US@EPA, Kevin Minoli
Date: 11/02/2010 12:03 PM
Subject: EPA comments on updated stream protection rule text

Sterling,

(b) (5) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(b) (5)

Best,
Greg



ATTACHMENT REDACTED - DELIBERATIVE

Surface and General SPR Text 10-27-10 EPA ed.docx

Mark Douglas/R3/USEPA/US

11/02/2010 01:41 PM

To Jessica Martinsen

cc

bcc

Subject Re: Doe Branch Letter

Jess,

Please review the paragraph you mentioned in the previous email.



ATTACHMENT REDACTED - DELIBERATIVE

Doe Branch EPA Comment Draft 11-2-10.doc

Mark Douglas
Environmental Assessment and Innovation Division
US EPA Region 3
3EA30
1650 Arch St
Philadelphia, PA 19103
215-814-2767

Jessica Martinsen

[Take a look at my recommended changes. Ther...](#)

11/02/2010 12:23:16 PM

From: Jessica Martinsen/R3/USEPA/US
To: Mark Douglas/R3/USEPA/US@EPA
Date: 11/02/2010 12:23 PM
Subject: Doe Branch Letter

Take a look at my recommended changes. There is some additional information that I think needs to be added (see paragraph on baseline info). Let me know what you think and then we'll send it to Jeff and Stef for review. I want to hand Bill E the letter tomorrow as part of the briefing.



ATTACHMENT REDACTED - DELIBERATIVE

Doe Branch EPA Comment Draft JM 11-2-10.doc

Jessica Martinsen
U.S. EPA Region III
Office of Environmental Programs
1650 Arch St. (3EA30)
Philadelphia, PA 19103
215-814-5144 (office)
215-814-2783 (fax)

Tanya Code/DC/USEPA/US

11/02/2010 02:58 PM

To Denise Keehner

cc

bcc

Subject Fw: Draft letter to OEJ on SPruce

I don't think this went out....

Tanya Code
Special Assistant
Office of Wetlands, Oceans and Watersheds
U.S. Environmental Protection Agency
Tel: 202.566.1063
Fax: 202.566.1147

----- Forwarded by Tanya Code/DC/USEPA/US on 11/02/2010 02:41 PM -----

From: Christopher Hunter/DC/USEPA/US
To: Denise Keehner/DC/USEPA/US@EPA
Cc: Brian Frazer/DC/USEPA/US@EPA, David Evans/DC/USEPA/US@EPA
Date: 10/07/2010 01:03 PM
Subject: Draft letter to OEJ on SPruce

Thanks Denise, please send to Charles Lee, and cc Cliff Rader and Suzi Ruhl.

Hello Charles,

(b) (5)



Thank you



Yazoo EJ.pdf Spruce RD 092410.doc

- Deer hunting is the most popular hunting and fishing-related public use on the refuges. Hunting programs also offer opportunities to take dove, waterfowl, rabbits, squirrels, raccoons, other fur bearers, turkey, and feral swine. Large portions of the refuges are accessible by all-terrain vehicles on designated trails, which are only available for hunting and fishing purposes.
- Waterfowl hunting is the second most popular hunting and fishing-related public use on the refuges. Records obtained through hunter use card returns on Panther Swamp NWR indicate that approximately 1,000 people hunt waterfowl each year depending on waterfowl abundance which is dependent on available rainfall, backwater flooding and riverine sources for food and rest areas. The proposed pump project will result in reductions in spring flooding, which will reduce the quality and quantity of waterfowl habitat during the remainder of the year. This would cause waterfowl to disperse to other locations on and off the affected area of the refuge. Hunters will then seek alternate areas causing a negative impact to waterfowl hunting on the NWR and the local economy.
- Fishing is the third most popular hunting and fishing-related public use on the refuges. There are numerous lakes and streams suitable for fishing on the refuges, and boat ramps are available on Panther Swamp NWR. In 2007, 3,000 visits were associated with fishing within the affected area of Panther Swamp NWR. Most of this is subsistence angling by economically disadvantaged people in the local area. Further degradation of the fishery anticipated as a result of the proposed project would reduce quality fishing opportunities on Panther Swamp NWR dramatically impacting local anglers.

The FWS fully anticipates that the proposed project's adverse impacts to fish and wildlife habitat values on the four NWR's in the Yazoo Backwater Area would adversely impact visitation and recreational opportunities, as well as environmental education and interpretation opportunities at these refuges – particularly as examples of remaining intact Lower Mississippi Alluvial Valley bottomland hardwood ecosystems. Although EPA does not cite impacts to recreation as a basis for this Final Determination, it is likely that these impacts would be significant.

B. Environmental Justice

In recognizing that minority and/or low-income communities frequently may be exposed disproportionately to environmental harms and risks, EPA is committed to protecting these burdened communities from adverse human health and environmental effects, consistent with Executive Order 12898 (EO), "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Feb. 11, 1994)." The main provision of EO 12898 states that "To the greatest extent practicable and permitted by law,...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations" (EO 12898, Section 1-101).

During its NEPA review of the Yazoo Backwater Area Project, the Corps included an environmental justice (EJ) analysis, conducted pursuant to EO 12898, in the FSEIS (FSEIS, Appendix 8 – Problem Identification/Socio-Econ Profile/Environmental Justice). Because EO 12898 directs agencies to implement its provisions "consistent with, and to the extent permitted

by, existing law” (EO 12898, Section 6-608), the scope of an EJ analysis is directly tied to the statutory and regulatory authority for the federal agency action. When the Corps reviews a project to determine whether to grant authorization under CWA section 404, it conducts a broad “public interest review” based on an evaluation of the “probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest” (33 CFR 320.4). In addition, under NEPA, the Corps examines the environmental effects, including human health, economic and social effects, of the project (33 CFR 230.1 and 230.4; 40 CFR 1508.8 and 1508.14).²⁵ Thus, in conducting its EJ analysis for the Yazoo Backwater Area Project the scope of the Corps’ authority was broad and it considered a wide range of environmental, social and economic factors.

The Corps’ EJ analysis discusses the general demographics of the project area, potential flood protection and potential economic development that could accrue from the project within communities with potential EJ concerns. EPA commends the Corps for including the EJ analysis in the FSEIS. However, the Corps EJ analysis may convey a message to members of communities with potential EJ concerns that specific flood control and economic development benefits will follow the completion of the project. Given the communities’ expectations of the benefits of the project, EPA believes that it is appropriate to discuss the proposed benefits of the project that EPA believes may not be realized.

The Corps has not demonstrated which surrounding communities will be protected and which will remain subject to flooding after the project is completed. Since publication of the FSEIS, the Corps has provided EPA with Corps flood maps and GIS data indicating the location of structures within the 10-, 50-, and 100-year floodplains of the project area. According to the Corps’ maps, most structures within the sparsely populated project area will not be protected from future flooding while a portion of the structures will benefit from the project. However, the maps do not include elevation information, structure type (i.e., residence, business, farm building, garage, etc.), whether the structures are habitable, and if so occupied or vacant, or what proportion of these structures are owned/occupied by residents with potential EJ concerns. Without the inclusion of the relative proximity of susceptible minority and/or low-income populations to the floodplains, it is impossible to know whether any such communities will be protected against 1-year, 2-year, or 100-year floods.

The Corps has not fully analyzed the impact of this project on potential economic development in communities with potential EJ concerns. According to the FSEIS, the primary economic benefits that may accrue from this project are from increased agricultural production. However, the primary agricultural beneficiaries have declined over 50 years from 2,913 farmers who owned 140 acres each to 192 farmers who own 2,036 acres each. While farm land use has increased in the area, earnings and overall contribution to the local economy have declined from 42 percent in 1969 to 17.4 percent by 2000 (FSEIS, Appendix 8, Table 8-23). The substantial decrease in small farms and farmers and the increased mechanization and industrialization within the project area may impact farm ownership and farm employment opportunities for members of communities with potential EJ concerns. Moreover, instead of resulting in additional farming jobs, post-project farm employment may continue to decrease due to greater opportunities for

²⁵ The requirements of NEPA do not apply to EPA when taking an action under 404(c). See CWA section 511(c)(1).

intensified farming and increased access to drier land, which may further promote the use of greater mechanization.

In the Proposed Determination, EPA Region IV raised concerns that the FSEIS did not address potential adverse impacts to populations that depend on subsistence fishing and/or hunting. EO 12898 states that “[i]n order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence” (EO 12898, Section 4-4).

The project sponsor’s comments on EPA’s Proposed Determination and Recommended Determination stated that the Yazoo Backwater Area is sparsely populated and very few people rely on subsistence hunting or fishing. The Corps stated that it does not believe that the proposed project would adversely impact subsistence fishing and/or hunting as it relates to communities with potential EJ concerns. Recent studies conclude that subsistence fishing and hunting in the Mississippi Delta is conducted by members of communities with potential EJ concerns (Brown, Xu and Toth 1998). EPA notes that those practices could be affected by the proposed project’s adverse impacts on the areas’ fisheries and wildlife resources. Brown and Toth (2001) state that “[t]he rich natural resource base of the [MS] Delta is accessed extensively and in some cases intensively by local residents.” Brown and Toth also state that white subsistence fishers in the Mississippi Delta eat over 100 pounds of fish a year, while African American subsistence fishers may consume fish at even greater numbers. As evidence of current subsistence fishing and/or hunting, EPA received comments from FWS; conservation organizations (e.g., American Rivers, Gulf Restoration Network, National Wildlife Federation, National Audubon Society, etc.); and private citizens, stating that low-income and minority residents in the Yazoo Backwater Area rely on fish and other wildlife, taken from the project area, to supplement their food sources and income and can be classified as subsistence fishers and/or hunters. FWS stated “[i]n 2007, 3,000 visits were associated with fishing within the affected area of Panther Swamp NWR [in the Yazoo Backwater Area]. Most of this is subsistence angling by economically disadvantaged people in the local area. Further degradation of the fishery anticipated as a result of the project is expected to reduce quality fishing opportunities on Panther Swamp NWR and this will have a dramatic impact to the local anglers.” Given EPA’s conclusion above that the proposed project would significantly degrade critical habitat for over 50 species of fish and other wildlife in the Yazoo Backwater Area and the impacts to the wetlands, fish and wildlife resources cannot adequately be mitigated, it is likely the project could adversely impact minority and/or low-income populations that depend on the Yazoo Backwater Area’s natural resources for subsistence.

The project sponsor contends that, because the studies cited above were based on surveys made prior to the issuance of a fish advisory by the Mississippi Department of Environmental Quality in June of 2001, none of the data can be applied to the use of subsistence fishing by minorities today. The 1998 and 2001 studies on subsistence fishing and hunting in the Mississippi Delta provide evidence that subsistence fishing by minorities has historically occurred and support EPA’s conclusion, based on comments received from the FWS and several conservation

organizations and individuals that subsistence fishing does in fact occur presently in the Yazoo Backwater Area.

Again, EPA commends the Corps for including the EJ analysis in the FSEIS for the proposed project; however, EPA believes the Corps has not demonstrated the project would provide the proposed benefits of flood protection and economic development, specifically to members of communities with potential EJ concerns in the Yazoo Backwater Area. Additionally, when determining the project would benefit members of communities with potential EJ concerns, the Corps did not examine whether the proposed project would adversely impact minority and/or low-income populations that depend on the Yazoo Backwater Area's natural resources for subsistence.

Like the Corps, EPA has met with the members of local communities with potential EJ concerns and listened to their concerns and expectations regarding the Yazoo Backwater Area Project. The members of communities with potential EJ concerns with whom EPA met expressed a strong belief, based on the proposed benefits touted by the project sponsor, that the project would protect their homes and property against flooding and bring economic development, jobs, and a return of residents to the area. However, as noted above, these project benefits have not been demonstrated. EPA is very sensitive to the importance of providing improved flood protection for the people living and working in the project area, which includes minority and low-income populations. Although EPA's section 404(c) determination would effectively prohibit the construction of the pumps as proposed, the Agency continues to believe there are alternatives that can provide improved flood protection or mitigation of flood damage to the communities within the Yazoo Backwater Area and EPA remains fully committed to participating in discussions with other federal and state agencies, and the public, to identify a solution for reducing flood damages in the Yazoo Backwater Area.

An EPA action pursuant to CWA section 404(c) should also consider the EJ impacts of the Agency's action under EO 12898. Given the Agency's commitment to environmental justice, during the section 404(c) process it examined, to the greatest extent practicable and permitted by law, any "disproportionately high and adverse human health or environmental effects" that may result from undertaking a 404(c) action in the context of the Yazoo Backwater Area Pumps Project.

The federal agency action that EPA is reviewing in the context of EO 12898 in this case is EPA's utilization of section 404(c) to preserve the fish and wildlife resources of the Yazoo Backwater Area by protecting important habitat. In the context of section 404(c), review of the Agency's action under EO 12898 is unique since EPA is not the permitting authority.

As stated above, the scope of an EJ analysis is directly tied to the statutory and regulatory authority for the federal agency action. Under CWA section 404(c), EPA is authorized to prohibit, restrict, or deny the specification of a defined area as a disposal site for the discharge of dredged or fill material into waters of the United States only when it determines that the discharge would have an unacceptable adverse effect on "municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." Thus, when EPA examines whether there are any "disproportionately high and adverse human

health or environmental effects,” in the context of a section 404(c) action, EPA examines the potential effects prohibiting the discharge will have on the “municipal water supplies, shellfish beds and fishery areas, wildlife and recreational areas” (“404(c) resources”) of the project site. EPA then examines whether those effects, if any, of the section 404(c) action on the 404(c) resources will have a “disproportionately high and adverse human health or environmental [effect]” on “minority populations and low-income populations” of the project area.

Applying the analysis above, EPA examined the potential effects of prohibiting the proposed project on the 404(c) resources that are located in the Yazoo Backwater Area and what effect that would have, if any, on members of communities with potential EJ concerns. EPA’s section 404(c) action, by prohibiting the project, is preventing any impact to the 404(c) resources. With no project and no unacceptable adverse effect on the 404(c) resources, there are no disproportionately high and adverse human health or environmental effects on the minority or low-income populations of the project area.

As stated above, EPA has questions on whether there would be substantial economic development or flood control benefits that would specifically go to members of communities with potential EJ concerns in the Yazoo Backwater Area. However, even if there were, economic development and flood control are outside the scope of 404(c) and thus outside the scope of EPA’s EJ review under EO 12898. EPA’s authority under 404(c) is limited to prohibiting, restricting, or denying the specification of any defined area as a disposal site for the discharge of dredged or fill material into waters of the United States only when it determines that the discharge would have an unacceptable adverse effect on 404(c) resources. A section 404(c) review does not involve a balancing of environmental benefits against non-environmental costs, such as the benefits of the foregone project (see 44 FR 58078). EPA wants to make clear that while economic development and flood control are outside the scope of section 404(c), and thus an EJ review conducted in the context of section 404(c), the Agency acknowledges the importance of providing improved flood protection to all community members in the project area, including members of communities with potential EJ concerns. As previously stated, EPA remains fully committed to participating in discussions with other federal and state agencies, and the public, to identify a solution for reducing flood damages in the Yazoo Backwater Area.

For the reasons stated above, EPA concludes that its section 404(c) determination will not have a disproportionately high and adverse human health or environmental effects on minority or low-income populations of the project area.

C. Project Alternatives

The FSEIS evaluates ten alternatives, including four alternatives with combined structural and nonstructural features, one completely structural alternative, four primarily nonstructural alternatives, and the “no action” alternative. The completely structural alternative (Plan 3 in the FSEIS) and all of the combination alternatives (Plans 4 through 7) include a 14,000 cfs pump station. They vary with respect to pump-on elevation (i.e., between 80 and 91 feet, NGVD), nonstructural features (except for Plan 3), and operational plans for the Steele Bayou control



Recommended Determination of the U.S. Environmental Protection Agency
Region III Pursuant to Section 404(c) of the Clean Water Act
Concerning the Spruce No. 1 Mine, Logan County, West Virginia



U.S. Environmental Protection Agency
Region III

September 24, 2010

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I. Executive Summary

The Spruce No. 1 Mine as currently authorized Department of the Army (DA) Permit No. 199800436-3 (Section 10: Coal River), is one of the largest mountaintop mining projects ever authorized in West Virginia. If it is fully constructed, it will disturb approximately 2,278 acres and bury approximately 7.48 miles of streams.

As the phrase suggests, "mountaintop mining" involves removing the top of a mountain in order to recover coal seams contained within the mountain. Explosives are used to break apart the mountain's bedrock, and earth-moving equipment is used to remove the excess rock, soil, and debris (called "spoil") that formerly had composed the portions of the mountain above and immediately below the coal seams. The fractured material is larger in volume than when it was intact, fused bedrock within the mountain. The amount of spoil that may be placed on the mined area is also limited due to stability concerns. Hence mountaintop mining generates large quantities of "excess spoil" (i.e., volumes of rock, soil, and debris that cannot be placed back in the mined area) that are deposited in valleys, thereby burying streams that flow through those valleys. In this case, if the Spruce No. 1 Mine is constructed as currently authorized, it will bury headwater stream ecosystems under 110 million cubic yards of excess spoil.

The Spruce No. 1 Mine has a lengthy and complex history. The DA Permit No. 199800436-3 (Section 10: Coal River) (DA Permit) was issued by the US Army Corps of Engineers, Huntington District (Corps) in January 2007 authorizing the Mingo Logan Coal Company to construct six valley fills, associated sedimentation structures, and other discharges of fill material to the Right Fork of Seng Camp Creek, Pigeonroost Branch, Oldhouse Branch, and their tributaries. Due to litigation and an agreement with environmental groups, operations have been limited to the Seng Camp Creek watershed and as part of that agreement one valley fill is partially constructed.

Throughout review of the project, the U.S. Environmental Protection Agency has raised concerns regarding adverse impacts to the environment. Additionally, data and information have become available since permit issuance, which have confirmed EPA's earlier concerns regarding the potential for adverse water quality impacts, the potential for cumulative impacts, the availability of further avoidance and minimization measures and problems with the proposed mitigation measures.

On April 2, 2010, the U.S. Environmental Protection Agency Region III (EPA Region III or Region III) published in the Federal Register a Proposed Determination to prohibit, restrict or deny the specification or the use for specification (including withdrawal of specification) of certain waters at the project site as disposal sites for the discharge of dredged and/or fill material for the construction of the Spruce No. 1 Mine. Region III took this step because it believed, despite the regulatory review intended to protect the environment, that discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) could destroy wildlife habitat and cause significant degradation of downstream aquatic ecosystems and therefore could have unacceptable adverse effects on wildlife.

A public hearing was conducted on May 18, 2010. Region III received over 100 oral comments and over 50,000 written comments both supporting and opposing its Proposed Determination. Region III has carefully considered the comments received and conducted additional analysis, which will be described herein, before rendering this Recommended Determination.

Based on the foregoing analysis and upon consideration of the public comments received in response to Region III's proposed determination, Region III believes that discharges of dredged and/or fill material to Pigeonroost Branch and Oldhouse Branch for the purpose of constructing the Spruce No. 1 Surface Mine as currently authorized by DA Permit would likely have unacceptable adverse effects on wildlife. For this reason, it is the recommendation of the Regional Administrator that the specification embodied in DA Permit No. 199800436-3 (Section 10: Coal River) of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material for construction of the Spruce No. 1 Surface Mine be withdrawn.

The goal of protecting water quality, plant and animal habitat, navigable waters, and other downstream resources requires as its first step the protection of headwater streams. Headwater streams perform services similar to those performed by capillaries in the human circulatory system. They are the largest network of waterbodies within our ecosystem and provide the most basic and fundamental building blocks to the remainder of the aquatic and human environment. As set forth herein, Pigeonroost Branch and Oldhouse Branch represent some of the very few remaining streams within the Spruce Fork sub-watershed and the Coal River sub-basin that represent "least degraded" conditions. They support diverse and healthy biological communities. As such, they are valuable in and of themselves and within the context of the Spruce Fork sub-watershed and Coal River sub-basin.

As currently authorized by DA Permit discharges of excess spoil to Pigeonroost Branch and Oldhouse Branch would bury those streams and their tributaries and the wildlife that live within them. Other wildlife would lose important headwater stream habitat on which they depend for all or part of their lifecycles.

In addition, the construction of valley fills, sedimentation ponds and other discharges into Pigeonroost Branch and Oldhouse Branch authorized by the DA Permit would likely have adverse impacts on downstream waters and wildlife living outside the footprint of the fill. These adverse impacts would be caused by the removal of functions performed by the buried resources and by transformation of the buried areas into sources that contribute contaminants to downstream waters. In addition, discharges to Pigeonroost Branch and Oldhouse Branch as currently authorized would likely contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life.

Based on these impacts, Region III has determined that discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal

River) would likely have unacceptable adverse effects on wildlife. Particularly in light of the high quality of the impacted resources, it is unlikely that the compensatory mitigation plan (CMP) for the project would offset these impacts. The proposed on-site created streams would be unlikely to replace the physical, chemical, and especially biological functions of Pigeonroost Branch and Oldhouse Branch.

There are other impacts that, while not forming the basis of the Recommended Determination, are of concern to the Region. To the extent that discharge of excess spoil outside jurisdictional waters, deforestation, and other activities associated with the project depend upon specification of Pigeonroost Branch and Oldhouse Branch as disposal sites, there are likely to be other adverse impacts from those dependent activities. In addition, impacts from the project will contribute to cumulative impacts from multiple surface mining activities in the Coal River sub-basin. There are also concerns regarding environmental justice.

II. Introduction

This document explains the basis for the EPA Region III recommendation to withdraw the specification of Pigeonroost Branch, Oldhouse Branch and their tributaries (all of which are waters of the United States) within Logan County, West Virginia as a disposal site for dredged or fill material in connection with construction of the Spruce No. 1 Surface Mine (Spruce No. 1 Mine or the project) as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River)(DA Permit or permit) (See Figure 3). While the DA Permit also authorizes construction of valley fills and other discharges to the Right Fork of Seng Camp Creek and its tributaries, Region III is not recommending withdrawal of specification of those waters in part because some of those discharges have already occurred.

EPA Region III is recommending that action be taken under section 404(c) of the Clean Water Act (CWA) because the Region believes that the discharges to Pigeonroost Branch and Oldhouse Branch and their tributaries for the purpose of constructing Spruce No. 1 Mine as currently authorized by the DA Permit would likely have unacceptable adverse effects on wildlife. Pigeonroost Branch and Oldhouse Branch and their tributaries are some of the last remaining streams within the Spruce Fork sub-watershed and the larger Coal River sub-basin that represent “least degraded” conditions. As such, they perform important hydrologic and biological functions, support diverse and productive biological communities, contribute to prevention of further degradation of downstream waters, and play an important role within the context of the overall Spruce Fork sub-watershed and Coal River sub-basin. The Spruce No. 1 Mine as currently authorized would bury virtually all of Oldhouse Branch and its tributaries and much of Pigeonroost Branch and its tributaries under excess spoil generated by mountaintop removal surface coal mining operations. Region III does not believe that the anticipated effects of the burial of all of Oldhouse Branch and much of Pigeonroost Branch will be offset by the proposed mitigation because it will not replace the chemical, physical and biological functions of the lost aquatic resources.

In addition, this recommendation considers the adverse impacts from mining-related activities, such as deforestation, that are associated with the discharge of excess spoil to areas outside the jurisdictional waters to the extent that these activities necessarily depend upon specification of Pigeonroost Branch and Oldhouse Branch for the construction of valley fills and sedimentation ponds. Moreover, the discharges associated with the Spruce No. 1 Mine will contribute to a cumulative adverse impact to the Spruce Fork sub-watershed, the Little Coal River watershed and the Coal River sub-basin. Finally, the Region continues to be concerned that potential issues related to disproportionate and high impact on the local population from construction of the Spruce No. 1 Mine have not been fully considered.

The next Section provides an overview of the Section 404(c) procedures, describes the Spruce No. 1 Mine as authorized, and summarizes the history of the project. Section IV describes the environmental characteristics of the project area, specifically Pigeonroost Branch and Oldhouse Branch, and the overall Coal River sub-basin. Section V examines the anticipated impacts from the Spruce No. 1 Mine as currently authorized. Consistent with Section 404(c), this discussion will focus on impacts to wildlife. Section VI will discuss other considerations, including impacts from activities associated with the Spruce No. 1 Mine that do not include direct discharges of dredged and/or fill material to jurisdictional waters but which may depend upon authorization of such discharges, and that are likely to cause direct and cumulative impacts to the environment and to local communities. Section VII describes EPA Region III's conclusions and recommendations.

III. Background

A. Section 404(c) Procedures

The CWA, 33 U.S.C. §§ 1251 et seq., prohibits the discharge of pollutants, including dredged or fill material, into waters of the United States (including wetlands) except in compliance with, among other provisions, Section 404 of the CWA, 33 U.S.C. § 1344. Section 404 authorizes the Secretary of the Army (Secretary), acting through the Chief of Engineers, to authorize the discharge of dredged or fill material at specified disposal sites. This authorization is conducted, in part, through the application of environmental guidelines developed by EPA, in conjunction with the Secretary, under section 404(b) of the CWA, 33 U.S.C. § 1344(b) (Section 404(b)(1) Guidelines). Section 404(c) of the CWA, 33 U.S.C. § 1344(c), authorizes the EPA to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site. EPA is authorized to restrict or deny the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever it determines, after notice and opportunity for public hearing, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

The procedures for implementation of Section 404(c) are set forth in 40 CFR Part 231. Under those procedures, if the Regional Administrator has reason to believe that use of a site for the discharge of dredged or fill material may have an unacceptable adverse effect

on one or more of the aforementioned resources, he may initiate the section 404(c) process by notifying the U.S. Army Corps of Engineers (Corps) and the applicant (and/or project proponent) that he intends to issue a Proposed Determination. Each of those parties then has fifteen days to demonstrate to the satisfaction of the Regional Administrator that no unacceptable adverse effects will occur, or that corrective action to prevent an unacceptable adverse effect will be taken. If no such information is provided to the Regional Administrator, or if the Regional Administrator is not satisfied that no unacceptable adverse effect will occur, the Regional Administrator will publish a notice in the Federal Register of his Proposed Determination, soliciting public comment and offering an opportunity for a public hearing.

Following the public hearing and the close of the comment period, the Regional Administrator will decide whether to withdraw the Proposed Determination or prepare a Recommended Determination. A decision to withdraw may be reviewed at the discretion of the Assistant Administrator for Water at EPA Headquarters. If the Regional Administrator prepares a Recommended Determination, he then forwards it and the administrative record compiled in the Regional Office to the Assistant Administrator for Water at EPA Headquarters. The Assistant Administrator makes the Final Determination affirming, modifying, or rescinding the Recommended Determination.

This document represents the third step in the process and explains the basis for EPA Region III's Recommended Determination.

B. Project Description

The Spruce No. 1 Mine as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River), is one of the largest mountaintop mining projects ever authorized in West Virginia. As currently authorized, it will disturb approximately 2,278 acres (about 3.5 square miles) and bury approximately 7.48 miles of streams. By way of comparison, the project area would take up a sizeable portion of the downtown area of Pittsburgh, PA (Figure 1).

**Spruce Mine No. 1 Permitted Boundary
Superimposed Over the City of Pittsburgh, PA**



Author: D. Evans, EPA R3 EAID

September, 2010

Figure 1 Spruce No. 1 Mine compared to downtown Pittsburgh, PA.

The project as authorized is located in the East District of Logan County, West Virginia at Latitude 38°52'39" and Longitude 81°47'52" depicted on the United States Geological Survey 7.5-minute Clothier and Amherstdale Quadrangles (Figure 2). The mine site is located approximately two miles northeast of Blair, in Logan County, West Virginia in the Central Appalachian ecoregion (Bryce, S.A., J.M. Omernik, and D.P. Larsen. 1999). <http://www.epa.gov/wed/pages/ecoregions.htm>

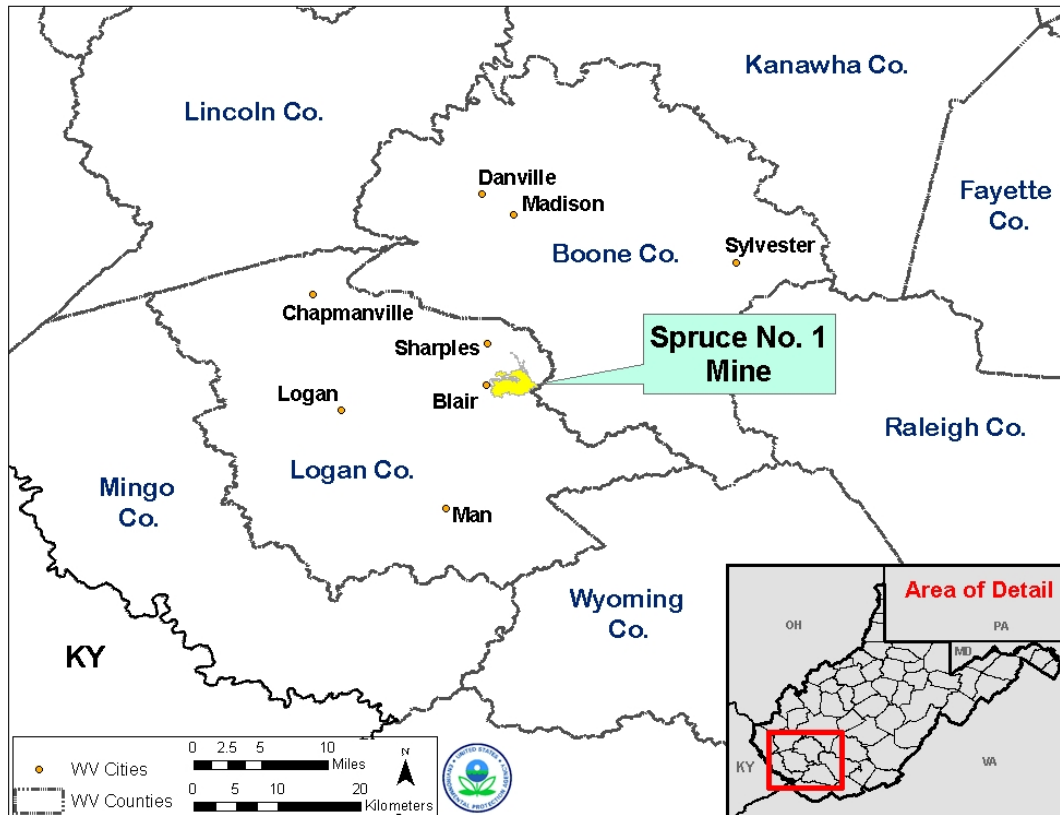


Figure 2: Spruce No. 1 mine location

According to the Environmental Impact Statement (EIS) prepared by the Corps in 2006 (Spruce No. 1 EIS) for the project, the Spruce No. 1 project is a mountaintop mining project targeting bituminous coal seams overlying and including the Middle Coalburg coal seam in the western portion of the project area. In the eastern portion of the project area, mountaintop mining would be limited to those seams including and overlying the Upper Stockton seam, with contour mining in conjunction with auger and/or highwall/thin-seam mining utilized to recover the Middle Coalburg seam.

As the phrase suggests, "mountaintop mining" involves removing the top of a mountain to recover coal seams contained within the mountain. Explosives are used to break apart the mountain's bedrock and earth-moving equipment is used to remove the excess rock, soil and debris (called "spoil") that formerly had composed the portions of the mountain above and immediately below the coal seam. The fractured material is larger in volume

than when it was intact, fused bedrock within the mountain. The amount of spoil that may be placed back on the mined area is also limited due to stability concerns. Hence mountaintop mining generates large quantities of "excess spoil" that cannot be placed back in the mined area. The "spoil" is then deposited in valleys, thereby burying streams that flow through those valleys.

The Spruce No. 1 EIS describes the project impacts as a disturbance of a total of 2,278 acres to recover seventy-five percent (75%) of the coal reserve targeted for extraction within the project area during fifteen (15) phases. The mining process would remove 400 to 450 vertical feet from the height of the mountain, about 501 million cubic yards of overburden material. Nearly 391 million cubic yards of spoil would be placed within the mined area (i.e., back on the mountain) and the remaining 110 million cubic yards of excess spoil would be placed in six valley fills, burying all or portions of the Right Fork of Seng Camp Creek, Pigeonroost Branch, and Oldhouse Branch and their tributaries (hereafter, references to Seng Camp Creek, Pigeonroost Branch, and Oldhouse Branch also include all tributaries to those waters that would be impacted by the project as authorized). Specifically, the DA Permit authorizes construction of Valley Fills 1A and 1B in Seng Camp Creek; Valley Fills 2A, 2B, and 3 in Pigeonroost Branch; and Valley Fill 4 in Oldhouse Branch, and numerous sedimentation ponds, mined-through areas and other fills in waters of the U.S (Figure 3). A detailed discussion of Spruce No. 1 project can be found in the Spruce No. 1 EIS on pages 2-35 through 2-61.

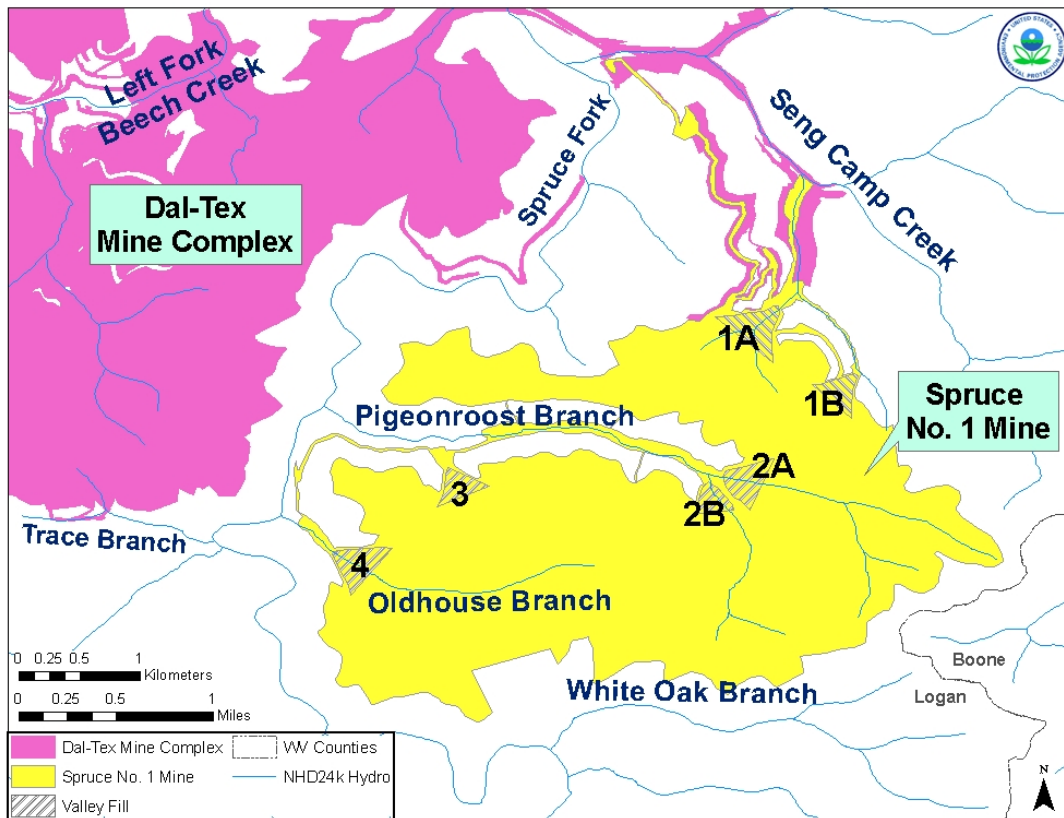


Figure 3. Spruce No. 1 Mine and associated valleyfills.

The Spruce No.1 Mine Surface Mining Control and Reclamation Act (SMCRA) Permit S-5013-97, Incidental Boundary Revision (IBR4, Modification 11) describes impacts from the project as including placement of dredged and fill material into approximately:

- 0.12 acre of emergent wetlands
- 10,630 linear feet (1.83 acres) of ephemeral stream channels (all permanent),
- 28,698 linear feet (6.12 acres) of intermittent stream channels
 - (26,184 linear feet [5.77 acres] permanent)
 - 2,514 linear feet [0.35 acre] temporary)
- 165 linear feet (0.034 acre) of perennial stream channel (all temporary),

While Region III is providing the foregoing summary from the SMCRA Permit S-5013-97 IBR for descriptive purposes, as set forth in more detail in Section V.C.2. below, Region III believes that the description provided in the Spruce No. 1 SMCRA Permit and in the Spruce No. 1 EIS incorrectly characterizes stream resources that will be impacted, as described further below.

The project as authorized also includes compensatory mitigation to offset adverse project impacts. EPA's concerns with the November 2006 compensatory mitigation plan (CMP) submitted by the permittee will be described in Section V.C.

C. Project History

This project has a lengthy and complex regulatory history. The Spruce No. 1 Mine was originally advertised as operated by Hobet Mining Inc., a subsidiary of Arch Coal, Inc.¹ The project as originally proposed in 1998, was larger than the currently authorized project and would have directly impacted a total footprint area of 3,113 acres and 57,755 linear feet (more than ten miles) of stream (not including indirect impacts to remaining downstream waters). At that time, the Corps tendered and ultimately withdrew a nationwide permit for the project, and the permittee, Mingo Logan, advised the Corps it would submit an individual permit application. An Environmental Impact Statement was prepared for the Spruce No. 1 project by the Army Corps of Engineers Huntington District pursuant to the National Environmental Policy Act, 42 U.S.C. 4332(C). The original project application also launched events that led to the Interagency Mountaintop Mining/Valley Fills in Appalachia Programmatic Environmental Impact Statement which was finalized in October 2005 (PEIS). The PEIS is available at www.epa.gov/Region3/mtntop/eis2005.htm.

An initial 2002 Spruce No. 1 Draft Environmental Impact Statement (EIS) considered a proposed project that was similar in scope and size to the original project described above. Region III's review of the 2002 Draft Environmental Impact Statement found gaps in the analyses of the mine and related adverse environmental impacts. Region III was particularly concerned by the lack of information regarding the nature and extent of impacts to the high quality streams that would be buried under valley fills, and recommended additional evaluation to support the analysis of less environmentally damaging alternatives. EPA Region III, in a letter dated August 12, 2002, indicated the EIS contained inadequate information for public review and for decision-makers.

In 2006, a revised Spruce No. 1 Draft EIS was prepared. At that time, the project was reconfigured to reduce impacts. The Mingo Logan, revised the mine plan to eliminate construction of a valley fill in White Oak Branch, a high quality stream (see Section IV.A. below) and the project area was reduced from 3,113 to 2,278 acres with direct stream impacts reduced to 7.48 miles.

In our June 16, 2006, comment letter on the 2006 Draft EIS, EPA Region III recognized that impacts from the mine had been reduced and the quality of EIS information had improved. However, the letter also noted that EPA had remaining environmental concerns associated with the Spruce No. 1 Mine, including potential adverse impacts to water quality (specifically, the potential to discharge selenium and the known correlation between similar mining operations and degradation of downstream aquatic communities), uncertainties regarding the proposed mitigation, need for additional analysis of potential environmental justice issues, and lack of study related to the cumulative impact of multiple mining operations within the Little Coal River watershed. EPA continued to

¹ Effective December 31, 2005, Arch Coal, Inc. transferred Spruce No. 1 Mine holdings and responsibilities to its Mingo Logan Coal Company (Mingo Logan) subsidiary.

stress its belief that corrective measures should be required to reduce environmental impacts and that other identified information, data, and analyses should be included in the final EIS.

Concerns regarding the Spruce No. 1 project were also raised by the U.S. Fish and Wildlife Service (USFWS), Ecological Services West Virginia Field Office in a letter dated May 30, 2006 from the Department of Interior, Philadelphia to the Huntington District Army Corps of Engineers. In that letter, the USFWS expressed concerns over the permittee's compensatory mitigation plan. The USFWS stated there was inadequate compensatory mitigation for the project because the assessment methodology used by the permittee to evaluate stream impacts considered only the physical characteristics of the impacted streams, without considering the equally important biological or chemical characteristics. The USFWS expressed concern the project would impact healthy, biologically functional streams and the mitigation included erosion control structures designed to convey water that would not replace the streams' lost ecological services.

The Corps issued the Spruce No. 1 Final EIS on September 22, 2006. On October 23, 2006, EPA commented on the Final EIS, noting that many of EPA's comments had not been adequately addressed. In a letter dated November 30, 2006, EPA offered its assistance to the Corps in developing a stream functional assessment protocol and willingness to work with Mingo Logan through EPA's Conflict Prevention and Resolution Center to develop a cumulative impact assessment and watershed restoration plan for the Little Coal River watershed.

Despite EPA and USFWS concerns on January 22, 2007, the Corps issued a Clean Water Act § 404 Permit (DA Permit No. 199800436-3 (Section 10: Coal River)) to Mingo Logan for the Spruce No. 1 Mine. That permit specified the Right Fork of Seng Camp Creek, Pigeonroost Branch and its tributaries, and Oldhouse Branch and its tributaries as disposal sites for the discharge of dredged and/or fill material from the Spruce No. 1 Mine.

On January 30, 2007, a number of environmental groups filed a complaint against the Corps in federal district court challenging its decision to issue the permit. That litigation was stayed for a period of time pending the U.S. Court of Appeals for the Fourth Circuit's decision in *Ohio Valley Environmental Coalition v. Aracoma Coal Co.*, 556 F.3d 177 (4th Cir. 2009). Following that decision, the litigation related to the Spruce No. 1 permit was reactivated. The litigation was then stayed again until October 22, 2010 following Region III's publication of its Proposed Determination on April 2, 2010.

In early 2007, Mingo Logan commenced limited operations at Spruce No. 1 pursuant to their DA Permit No. 199800436-3 (Section 10: Coal River) subject to an agreement with the environmental groups who are plaintiffs in the litigation. Pursuant to that agreement, Mingo Logan has been operating in a portion of the project in the Seng Camp Creek drainage area, including construction of one valley fill (valley fill 1A). Under the agreement, Mingo Logan must give plaintiffs 20 days notice before expanding operations

beyond the area subject to the agreement, and has done so once without objection from the plaintiffs. Mingo Logan's operations in the Seng Camp Creek watershed have generated data related to impacts from the project as constructed, including discharge monitoring reports submitted to the West Virginia Department of Environmental Protection (WVDEP). These data have been reviewed by Region III.

While the litigation was pending, the scientific literature began to reflect a growing scientific consensus of the importance of headwater streams, a growing concern about the adverse effects of mountaintop removal mining, and concern that impacted streams cannot easily be replaced. Many of these studies are cited in this Recommended Determination. On June 11, 2009, EPA, the Department of the Army, and the Department of the Interior entered into a *Memorandum of Understanding Implementing the Interagency Action Plan on Appalachian Surface Coal Mining*, in which the agencies agreed to take steps to reduce the harmful environmental consequences of Appalachian surface coal mining. On April 1, 2010, the U.S. Environmental Protection Agency's Office of Research and Development made available for public comment two reports titled: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*. On the same day, EPA also published interim guidance titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order*.²

On September 3, 2009, Region III requested the Corps suspend, modify or revoke DA Permit No. 199800436-3 (Section 10: Coal River) for discharges associated with the Spruce No. 1 Mine. On September 30, 2009, the Corps of Engineers stated that it would not reconsider the permit authorization. As a result, Region III initiated the Clean Water Act Section 404(c) process on October 16, 2009. Region III communicated with representatives of Mingo Logan and the Corps both in person and by telephone and electronic mail on several occasions to determine whether corrective action would be taken to address Region III's concerns. On April 2, 2010, Region III published in the Federal Register a Proposed Determination to withdraw specification of Pigeonroost Branch and Oldhouse Branch pursuant to CWA section 404(c). Region III solicited public comments on the Proposed Determination and held a public hearing in Charleston, West Virginia on May 18, 2010. Region III received over 50,000 comments on the Proposed Determination. Of these approximately 70% of comment letters submitted to the docket generally supported EPA's Proposed Determination while 65% of public hearing participants generally opposed EPA's Proposed Determination.

² Issuance of this guidance document is mentioned here solely for purposes of describing recent events related to EPA's understanding of impacts from Appalachian surface coal mine activities. The guidance provides a framework for EPA review of certain proposed surface coal mining applications. This Recommended Determination is based upon Region III's review of scientific and other information regarding the likely effects from the discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal River). Region III did not rely upon the April 1 Guidance in making its Recommended Determination.

In addition to its DA Permit No. 199800436-3 (Section 10: Coal River), the project received authorizations from the WVDEP, including authorization pursuant to the State's surface mining program approved under the Surface Mining Control and Reclamation Act of 1977 (SMCRA), 30 U.S.C. 1201-1328 (SMCRA permit), and a National Pollutant Discharge Elimination System (NPDES) permit for discharges of pollutants pursuant to Section 402 of the Clean Water Act, 33 U.S.C. 1342. WVDEP also issued a Clean Water Act Section 401 water quality certification.

IV. Characteristics and Functions of the Impacted Resources³

The resources that will be impacted by the Spruce No. 1 Mine include Central Appalachian headwater stream ecosystems in Pigeonroost Branch and Oldhouse Branch. Those waters have surface connection and flow to Spruce Fork, which in turn flows to the Little Coal River, and the Coal River. Because of the connectivity between headwater systems and downstream waters, Spruce Fork, the Little Coal River and the Coal River also would be likely to be impacted by discharges to Pigeonroost Branch and Oldhouse Branch. Accordingly, the characteristics and functions of the resources that will be impacted by discharges of fill material associated with the Spruce No. 1 Mine are best viewed from the perspective of the ecologic functions performed by Appalachian headwater stream ecosystems and within the context of the larger Spruce Fork sub-watershed and Coal River sub-basin.

Headwater streams play an important role in the ecosystem far beyond the mere transport of water from one point to another. In many ways, headwater streams are like the capillaries within the human circulatory system. Headwater streams form the largest network of waterbodies within the ecosystem and, as the early stages of the river continuum, provide the most basic and fundamental building blocks to the remainder of the aquatic and human environment. Appalachian headwaters provide habitat for wildlife. They also are a locus of significant interface between the river system and the terrestrial environment. Appalachian headwater streams and their wildlife inhabitants convert organic matter from the surrounding landscape (such as leaf litter) and transform it into nutrients and energy that can be transported and consumed by downstream

³ Region III derives its understanding of the potentially impacted resources and the predicted impacts of the project from several sources. The Draft (June 2003) and Final (October 2005) Interagency Mountaintop Mining/Valley Fills in Appalachia Programmatic EIS (PEIS) represent an important inter-agency effort designed to inform more environmentally sound decision-making for future permitting of mountaintop mining/valley fills. It had a geographic focus of 12 million acres encompassing most of eastern Kentucky, southern West Virginia, western Virginia, and scattered areas of eastern Tennessee, and included the Spruce No. 1 project area and the Coal River subbasin. EPA also consulted information gathered by the WVDEP, including an assessment of the Coal River sub-basin conducted in 1997, data collected to support the 2006 Coal River sub-basin total maximum daily load (TMDL), and WVDEP and nationally available GIS data. EPA also reviewed the 2006 Spruce No.1 EIS, and other sources of data including studies conducted by EPA scientists and discharge monitoring reports generated by Mingo Logan. In addition, EPA consulted a wide range of peer reviewed studies and literature. EPA Region III also communicated with the US Fish and Wildlife Service Elkins Field Office on impacts to fish and wildlife resources in the project area. Appendices to this Recommended Determination (RD) contain more detailed specific data, analysis and an index of references.

ecosystems. They also play an important role in storing, retaining and transporting nutrients, organic matter, and sediment. In addition they perform hydrologic functions related to downstream flow regimes, moderating flow rate and temperature. "Value of Headwater Streams: Results of a Workshop" from PEIS on MTM/VF (EPA 2003; <http://www.epa.gov/region03/mtntop/pdf/appendices/d/value-of-headwater-streams/headwater.pdf>); Fischenich, J.C. (2006), *Functional objectives for stream restoration*. EMRRP Technical Notes Collection (ERDC TN-eMRRP-SR-52 Vicksburg).

As authorized, the Spruce No. 1 Mine would bury under valley fills or impact through construction of sedimentation ponds substantially all of Oldhouse Branch and its tributaries and a substantial portion of Pigeonroost Branch and its tributaries. Oldhouse Branch and Pigeonroost Branch support ecosystems and conditions consistent with "least degraded" conditions in the Coal River sub-basin. As such, they are valuable in and of themselves and for the functions they perform within the context of the Spruce Fork sub-watershed and the Coal River sub-basin.

A. Watershed and Stream Conditions

1. Pigeonroost Branch and Oldhouse Branch

The stream systems that are the subject of this Recommended Determination, Pigeonroost Branch and Oldhouse Branch, are healthy stream systems supporting diverse aquatic communities as measured by their benthic macroinvertebrate populations.

In a body of water, benthic macroinvertebrates are the bottom-dwelling (benthic) organisms that are large enough to be seen without the aid of microscopes (macro) and do not have backbones (invertebrate). Freshwater macroinvertebrates, such as mayflies and stoneflies, serve as indicators of ecosystem health, and play a vital role in food webs and in the transfer of energy in river systems. These organisms convert plant material into fats and proteins, food sources critical for maintaining healthy fish and amphibian populations, as well as for foraging terrestrial vertebrates such as birds, bats, reptiles, and small mammals. In this ecological niche, macroinvertebrates deliver energy and nutrients along the stream continuum. They also clean excess living and nonliving organic material from freshwater systems, a service that contributes to the overall quality of the watershed. Because of these functions, macroinvertebrates are essential organisms within the food web, supporting the health of the entire aquatic ecosystem.

Macroinvertebrates are also good indicators of watershed health and are used by West Virginia and other states in the Mid-Atlantic region and across the U.S. to assess the quality of their waters. They are good indicators because they live in the water for all or most of their life cycle. Macroinvertebrates can be found in all streams, are relatively stationary and cannot escape pollution. They also differ in their tolerance to the amount and types of pollution. Macroinvertebrate communities integrate the effects of stressors over time and some taxa (i.e., taxonomic category or group such as phylum, class, family, genus, or species) are considered pollution-tolerant and will survive in degraded conditions. Other taxa are pollutant-intolerant and will die when exposed to certain levels

of pollution. Thus, the composition of tolerant and intolerant (i.e., sensitive) communities informs scientists about the quality of the water.

In a healthy stream, one would expect to find a high diversity of benthic macroinvertebrate taxa and a large number of different taxa including taxa that are more sensitive to stressors. Using the mayfly (Insecta: Ephemeroptera) as an example, some genera of mayfly are more sensitive than others. The presence of a large number of individuals from the more sensitive mayfly genera indicates good water quality conditions. Mayflies in particular have long been recognized as important indicators of stream ecosystem health. Mayflies are a very important part of the native organisms in Appalachian headwater streams and they routinely make up between 30%-50% of the insect assemblages in certain seasons. Numerous studies demonstrate that mayfly community structure reflects the chemical and physical environment of watercourses (e.g., Barber-James et al. 2008; Bauernfeind & Moog 2000). See Appendix 1 for more detail on macroinvertebrates as indicators of water quality.

According to Morse et al. (1997), the Central Appalachian ecoregion has many endemic and rare species of benthic macroinvertebrates in the orders Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies).⁴ This diversity and unique assemblage has been attributed to the unique geological, climatic, and hydrological characteristics of this region. The Spruce No. 1 Mine project area has been found to be very rich in macroinvertebrates species. Data from the PEIS, the Spruce No. 1 EIS and from the WVDEP monitoring database indicate that high macroinvertebrate diversity exists in Pigeonroost Branch and Oldhouse Branch. Data from EPA, WVDEP, and the applicant's consultants (Sturm Env. Services, BMI, Inc.) reveal that collectively, Pigeonroost Branch, Seng Camp Creek, and Oldhouse Branch contain a high number of mayfly taxa and individuals. A total of 21 genera (Table 2) have been identified from these three headwater streams indicating these systems offer high water quality and optimal habitat.

Macroinvertebrate data collected in Oldhouse Branch indicates that the quality of the macroinvertebrate community in Oldhouse Branch is in the top 5% of all streams in the Central Appalachia ecoregion. In 1999-2000, EPA collected eighty-five (85) macroinvertebrate genera in riffle complexes⁵ of Pigeonroost Branch and Oldhouse Branch.

With respect to mayfly taxa, as many as nine genera have been collected in Oldhouse Branch in any one season-specific sample, with an average of seven genera across multiple samples. This observation ranks in the 95th percentile of all samples taken in the Central Appalachian ecoregion (937 samples) by WVDEP. Out of more than 4000

⁴ The orders Ephemeroptera, Plecoptera and Trichoptera (EPT taxa) contain pollution sensitive groups and are used by natural resource agencies such as West Virginia Department of Environmental Protection to assess watershed health.

⁵Riffle and pool complexes are considered special aquatic sites under 40 CFR 230.1(d) and as such the degradation or destruction of these sites is considered to be among the most severe environmental impacts covered by the 404(b)(1) Guidelines.

samples collected statewide in West Virginia, Oldhouse Branch ranks in the 90th percentile. Pigeonroost Branch contained eight mayfly genera in a season-specific sample, ranking it among the 90th percentile in the Central Appalachians and 83rd percentile statewide from among more than 4000 single-sample observations.

The data are similar for stoneflies. Data compiled from EPA, WVDEP, and the applicant's consulting firms show that Oldhouse, Pigeonroost, and Seng Camp collectively yielded 16 genera of stoneflies (Table 3). Oldhouse and Pigeonroost both had 11 genera. A single collection in Oldhouse by EPA (Spring 2000) had 9 genera of stoneflies which ranks greater than the 98th percentile of all Central Appalachian streams sampled by WVDEP (937 samples). This means that only 2% of stream samples in this ecoregion had more stonefly taxa than Oldhouse within a single sampling event. Pigeonroost Branch had as many as six stonefly genera in any one season-specific sample, ranking it at the 83rd percentile among 937 Central Appalachian streams, and 72nd percentile statewide.

Water chemistry data for Pigeonroost Branch and Oldhouse Branch also reflect healthy streams with little human disturbance. Data from WVDEP indicate that average conductivity values for the unmined streams on the Spruce No. 1 project area are very low. Based on the WVDEP dataset (2002-2003), Oldhouse Branch had an average conductivity level of 90 $\mu\text{S}/\text{cm}$, which is below that of White Oak Branch, a nearby reference-quality stream, which had an average conductivity level of 118 $\mu\text{S}/\text{cm}$. Conductivity levels described above in Oldhouse Branch and White Oak Branch indicate excellent water quality, comparable to reference quality streams for this ecoregion. Sulfate concentrations in these streams are also low (28 mg/l in Oldhouse and 24 mg/l in White Oak Branch). Pigeonroost Branch had a conductivity level of 199 $\mu\text{S}/\text{cm}$ and sulfate level of 99 mg/l. The slightly elevated average conductivity and sulfate values reflect the relatively small amount of historical mining landuse in the Pigeonroost watershed.

During the December 2008 to March 2010 time frame, discharge monitoring reports submitted by the permittee indicate 15 of the 16 selenium measurements at both Pigeonroost Branch and Oldhouse Branch were below the detection limit of 0.6 $\mu\text{g}/\text{L}$. The single detection of selenium on Oldhouse Branch was 0.9 $\mu\text{g}/\text{L}$ during July 2009. The single detection of selenium on Pigeonroost Branch was 1.9 $\mu\text{g}/\text{L}$ during August 2009. These readings are far below West Virginia's numeric chronic water quality criterion for selenium of 5 $\mu\text{g}/\text{L}$. These levels are also significantly lower than levels demonstrated immediately downstream of adjacent mining operations, as described below.

2. The Spruce Fork Sub-watershed and the Coal River Sub-basin

The Spruce No. 1 mine is located within the larger Spruce Fork sub-watershed (12-digit hydrologic unit code (HUC) and the Coal River sub-basin (8-digit HUC) (Figure 4). Pigeonroost Branch and Oldhouse Branch flow to Spruce Fork, which in turn flows into the Little Coal River and then into the Coal River. Oldhouse Branch and Pigeonroost

Branch are important within the context of the larger Coal River sub-basin and Spruce Fork sub-watershed because they represent some of the few stream systems supporting least-degraded conditions within those watersheds.

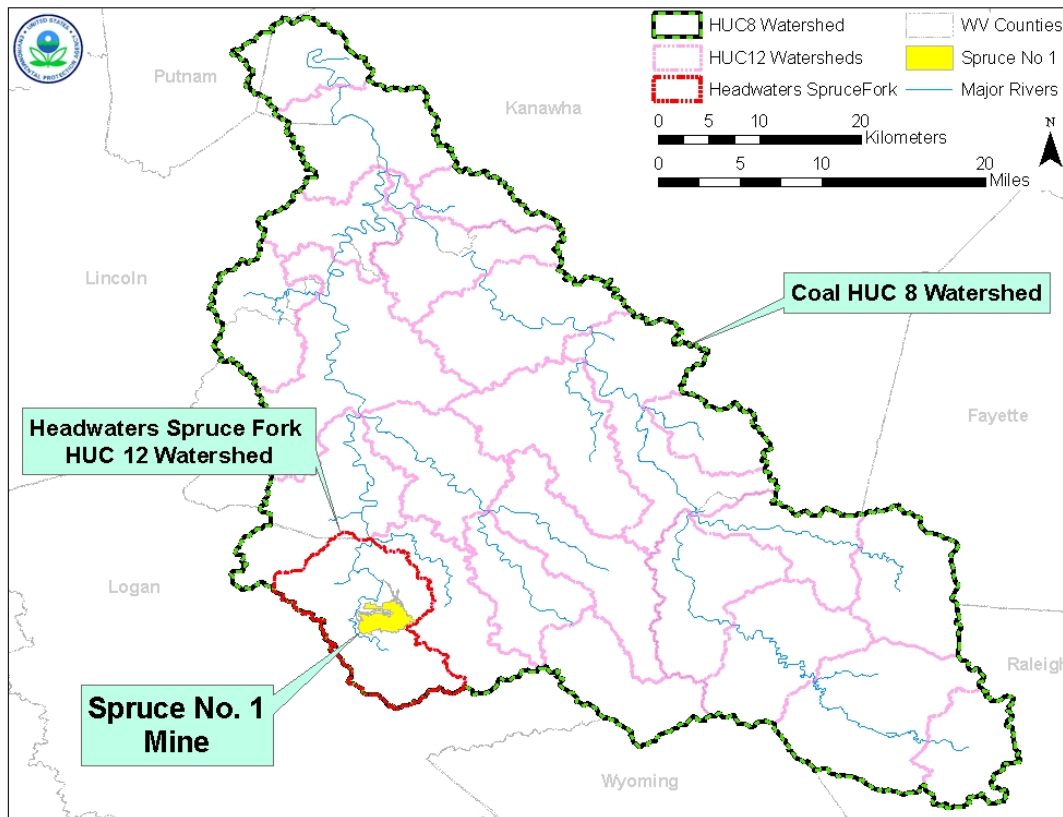


Figure 4 Spruce Fork sub-watershed (12-digit hydrologic unit code (HUC)) and the Coal River sub-basin (8-digit HUC)

The Coal River sub-basin encompasses nearly 891 square miles within West Virginia. Major tributaries within the Coal River sub-basin include Marsh Fork, Clear Fork, Pond Fork, Spruce Fork, and Little Coal River. Marsh Fork and Clear Fork join at Whitesville, WV to form the Big Coal River. Pond Fork and Spruce Fork join at Madison, WV to form the Little Coal River. Little Coal and Big Coal Rivers join to form the Coal River at Forks of the Coal, WV. The Coal River sub-basin has been impacted by past and present surface mining. Based upon the National Land Cover Database (NLCD) change product for 1992-2001 and WVDEP's Geographic Information System (GIS) mining files, more than 257 past and present surface mining permits have been issued in the Coal River sub-basin, which collectively occupy more than 13% of the land area. Some sub-watersheds in the Coal River sub-basin have more than 55% of the land occupied by surface mine permits.

The Spruce Fork sub-watershed, where the project is located, is a fourth order tributary that combines with Pond Fork to form the Little Coal River, which in turn flows into the Coal River. Spruce Fork is located in the southwestern portion of the Coal River watershed and drains approximately 126.4 square miles. The dominant landuse in the

Spruce Fork watershed is forest. Other important landuse types include urban/residential and barren/mining land. The Spruce Fork sub-watershed has been impacted by past and present surface mining activity. According to WVDEP Division of Mining and Reclamation permit maps, within the Headwaters Spruce Fork sub-watershed, where Spruce No. 1 is to be located, there are more than 34 past and present surface mine permits issued which collectively occupy more than 33% of the land area. Assuming full constructions of these projects in addition to known future surface mining permits, more than 40% of the land area of the sub-watershed will be affected.

In 1997, the WVDEP performed its first comprehensive ecological assessment of the Coal River sub-basin⁶. WVDEP assessed three major aspects of watershed health: water quality, habitat condition, and benthic macroinvertebrate community status. The subsequent report, *An Ecological Assessment of the Coal River Watershed* (1997), indicated that sediments, coal mining and inadequate sewage treatment were the major stressors on streams in this watershed. As a part of that assessment WVDEP stated:

High quality streams with minimal human disturbances provide significant and even irreplaceable wildlife habitat. They also provide a tremendous recreational resource. No sites in the Coal River Watershed met the minimum criteria for reference site status. This is the first of 32 watersheds studied in West Virginia that produced no potential reference sites. Researchers conducting the EPA study on mountaintop mining, alluded to previously, have found a few small streams within the watershed that may meet the reference site criteria. The Program has since adopted one stream, White Oak Branch, (KC-10-T-22), as a reference site. Since reference sites reflect least-degraded conditions, it is vital that the WVDEP do its part in fulfilling the mission of preserving the high quality of these rare and important streams. It is also important that the agency make a concerted effort to find the apparently few remaining streams within the watershed that have not been significantly impacted by human disturbances.

White Oak Branch, referenced above in WVDEP's 1997 study, flows to Spruce Fork immediately upstream of Oldhouse Branch and Pigeonroost Branch. As noted above, WVDEP has adopted White Oak Branch as a reference site. WVDEP defines reference conditions as those conditions that “describe the characteristics of waterbody segments least impaired by human activities and are used to define attainable biological and habitat conditions. Final selection of reference sites depends on a determination of minimal disturbance, which is derived from physico-chemical and habitat data collected during the assessment of the stream sites.” Reference sites are used to determine the score that represents the threshold between impaired and non-impaired sites.

Based on a comparison of their macroinvertebrate communities, Oldhouse Branch and Pigeonroost Branch are of comparable quality to White Oak Branch. Accordingly, Oldhouse Branch and Pigeonroost Branch reflect least-degraded conditions and represent

⁶ Report can be found at

http://www.dep.wv.gov/WWE/watershed/wqmonitoring/Documents/EcologicalAssessments/EcoAssess_Coal_1997.pdf

some of the few remaining streams within the Coal River sub-basin that have not been significantly adversely impacted by human disturbances.

Oldhouse Branch flows into Spruce Fork immediately downstream of White Oak Branch and exhibits similar healthy biological diversity and water quality (EPA data). Using the West Virginia Stream Condition Index (WVSCI), an assessment method developed for use in West Virginia to help evaluate the health of benthic macroinvertebrate communities at the family level in wadeable streams,⁷ both Oldhouse Branch and White Oak Branch scored comparably well, meaning that both were of similar quality and supporting similar aquatic communities.

Oldhouse Branch and White Oak Branch also score comparably well when the benthic macroinvertebrate community is considered at the more sensitive genus (as opposed to family) level. For instance, Oldhouse Branch shared 55 total genera (many of them pollution intolerant) with White Oak Branch (EPA data) indicating a diverse and healthy aquatic community in Oldhouse Branch similar to the high quality communities of White Oak Branch.

Pigeonroost Branch also shares many macroinvertebrate genera (many of them pollution intolerant) in common with the high quality community in White Oak Branch, indicating that the health of Pigeonroost Branch's aquatic community is similar. The WVSCI assessment of Pigeonroost indicates water quality is relatively good despite the presence of localized historic mining in the watershed. See Section IV.B.1. and Appendix 1 for more detail on macroinvertebrates at the Spruce No. 1 mine project site.

The relatively high quality of Oldhouse Branch and Pigeonroost Branch also can be demonstrated by comparison to other streams in the Spruce Fork sub-watershed that have been impacted by mining operations similar to the Spruce No. 1 Mine. Four such streams are directly northwest of the Spruce No. 1 project, on the west side of Spruce Fork, and in part, are impacted by the Mingo Logan Dal-Tex Mining Operation. Section V.B.2.a below compares the health of the relatively unimpacted macroinvertebrate communities in Pigeonroost Branch and Oldhouse Branch with the macroinvertebrate communities in streams elsewhere within the Spruce Fork sub-watershed that have been impacted by mining activity. By way of summary here, Oldhouse Branch and Pigeonroost Branch support a much healthier and more diverse assemblage of benthic macroinvertebrates than do the four comparison streams that are impacted by the Dal-Tex operation.

B. Wildlife

The ecoregion where the Spruce No. 1 project is located (Figure 5) has some of the greatest aquatic animal diversity of any area in North America, especially for species of amphibians, fishes, mollusks, aquatic insects, and crayfishes. Salamanders in particular reach their highest North American diversity in the Central Appalachian ecoregion.

⁷ For a more detailed discussion of WVSCI, see Section V.B.2.a.iii.

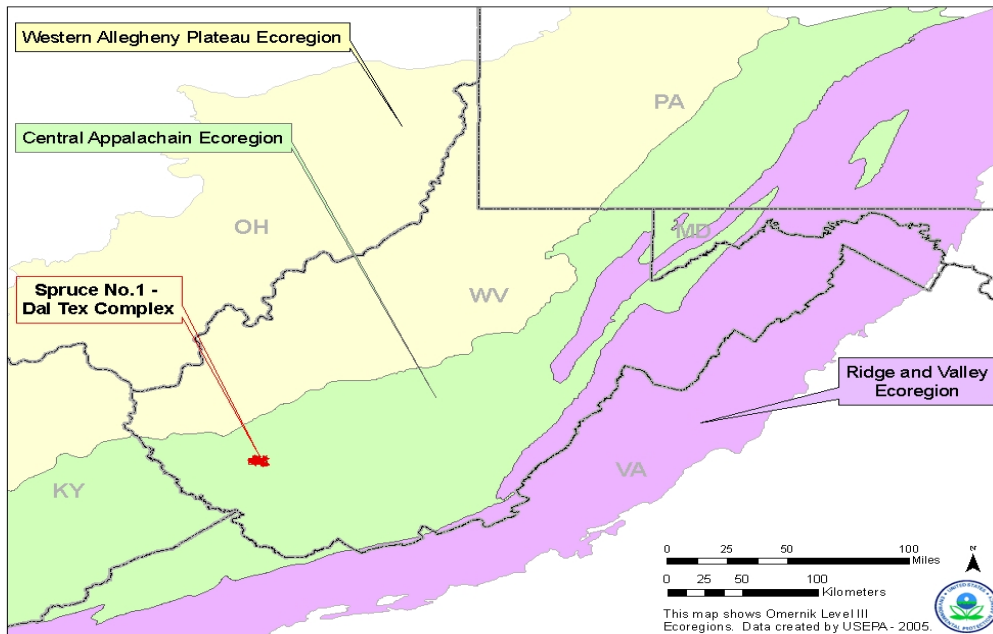


Figure 5 Central Appalachian Ecoregion

The ecoregion where the Spruce No. 1 project is located includes one of the most prominent biodiversity hot spots of rarity and richness identified by The Nature Conservancy (TNC) (Figure 6).

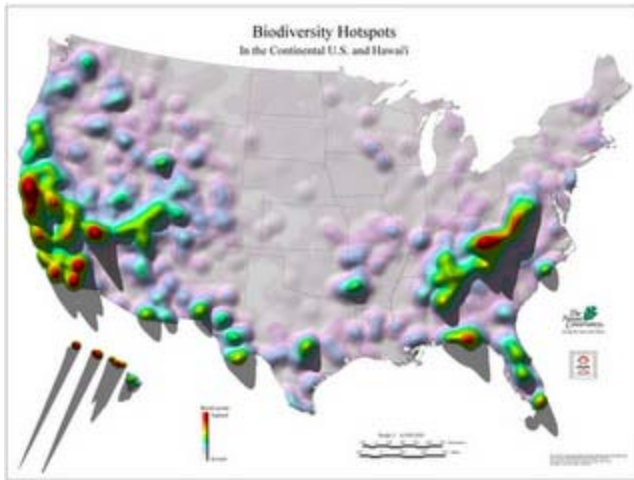


Figure 6: TNC Biodiversity Hotspots

Map adapted from Precious Heritage:
The Status of Biodiversity in the United States.
Data from State Natural Heritage Programs and their cooperators.
Map produced by TNC Eastern Conservation Science GIS, 5/19/00.
© The Nature Conservancy

<http://www.nature.org/wherewework/northamerica/states/westvirginia/science/>

Individual watersheds and peaks in the Appalachian chain, isolated for millions of years with benign environmental conditions, provided a perfect setting for the evolution of unique species of plants, invertebrates, salamanders, crayfishes, freshwater mussels, and fishes. These forests represent the center of the earth's salamander diversity. Not only are there numerous species, but salamanders also are incredibly abundant here, often accounting for the most vertebrate biomass in a given patch of forest (Stein et al, 2000). It has been documented that other specialized wildlife such as some neotropical migrant birds and forest amphibians rely on the natural headwater stream condition and adjacent forest types exhibited by Pigeonroost Branch and Oldhouse Branch for maintenance of their populations (Stein et al, 2000).

1. Invertebrates

As set forth above in Section IV.B.1. above, Pigeonroost Branch and Oldhouse Branch support diverse and healthy communities of benthic macroinvertebrates. In terms of its mayfly community, Oldhouse Branch ranks in the top 5% in the eco-region and the top 10% in the State. Oldhouse Branch's stonefly community ranks in the top 2% of the ecoregion. Pigeonroost Branch's mayfly community ranks among the top 10% in the co-region and the top 17 % in the State. Pigeonroost's stonefly community ranks in the top 17% in the eco-region and the top 28% third of the State.

As described above, benthic macroinvertebrates are the bottom-dwelling (benthic) organisms that are large enough to be seen without the aid of microscopes (macro), and are not equipped with backbones (invertebrate). Put simply, they are aquatic insects. In addition to serving as indicators of ecosystem health, freshwater macroinvertebrates, including mayflies and stoneflies, play a vital role in food webs and in the transfer of energy in river systems. These organisms essentially convert plant material into food sources (fats and proteins) essential for the maintenance of healthy fish and amphibian populations, and for foraging terrestrial vertebrates such as birds, bats, reptiles, and small mammals; serving as critical foodchain organisms, vital to the sustenance of healthy ecosystems. Because of their productivity and secondary position in the aquatic food chain, macroinvertebrates play a critical role in the delivery of energy and nutrients along the stream continuum. They also are instrumental in cleaning excess living and nonliving organic material from freshwater systems, a service that contributes to the overall quality of the watershed.

Macroinvertebrates are indigenous to central Appalachian streams and their naturally occurring communities are important components of stream ecosystems. Macroinvertebrates are recognized as wildlife by several organizations, including the US Fish and Wildlife Service (USFWS), USDA Forest Service, The Nature Conservancy, State Natural Heritage programs, and the West Virginia Department for Natural Resources (WVDNR). Currently, within the U.S., the USFWS lists 50 species of insects as endangered under the Endangered Species Act (ESA), and another 10 species as threatened under the ESA. Insects represent 10.4 percent of all currently-listed animals in the U.S. and 4.4 percent of all listed species, including plants (http://ecos.fws.gov/tess_public/pub/boxScore.jsp). Several dozen other insects are candidates for listing under the ESA, including the Sequatchie caddisfly (*Glyphopsyche sequatchie*), a trichopteran found in Tennessee.

The State of West Virginia also considers insects to be wildlife, and includes insects on its list of rare, threatened and endangered species. Many aquatic insects are listed, including: 12 species of stoneflies, two species of mayflies, and 73 species of dragonflies and damselflies (West Virginia Natural Heritage Program 2007). Scientists and environmental consultants who collect benthic macroinvertebrates in West Virginia must obtain a wildlife collection permit from WVDNR.

Mayflies are most popularly known among fly-fishermen, where anglers rely on the seasonal hatches of mayflies that coincide with catching trout and other game fish species. Not only do trout rely on mayflies and stoneflies, but a group of colorful benthic fishes known as Darters (Percidae) feed primarily on mayflies. A dietary study of small stream fishes in the Appalachian coalfields of Kentucky (Lotrich 1973) showed that gut contents of several darters contained mostly mayflies. Darters are an important part of the fish assemblage and many are hosts for mussel larvae. Several darter species inhabit Spruce Fork in the immediate vicinity of the project area. Table 1 identifies the mayfly genera that have been identified in the Spruce No. 1 mine permit area.

Table 1. Presence/absence of mayfly genera in the permit area.

Order	Family	Genus	Oldhouse	Pigeonroost	Seng Camp
Ephemeroptera	Ameletidae	<i>Ameletus</i>	X	X	
Ephemeroptera	Baetidae	<i>Acentrella</i>	X	X	
Ephemeroptera	Baetidae	<i>Baetis</i>	X	X	X
Ephemeroptera	Baetidae	<i>Diphetor</i>		X	
Ephemeroptera	Baetiscidae	<i>Baetisca</i>		X	X
Ephemeroptera	Caenidae	<i>Caenis</i>			X
Ephemeroptera	Ephemerellidae	<i>Attanella</i>		X	X
Ephemeroptera	Ephemerellidae	<i>Dannella</i>		X	X
Ephemeroptera	Ephemerellidae	<i>Drunella</i>	X	X	
Ephemeroptera	Ephemerellidae	<i>Ephemerella</i>	X	X	
Ephemeroptera	Ephemerellidae	<i>Eurylophella</i>	X	X	X
Ephemeroptera	Ephemeridae	<i>Ephemerella</i>	X	X	X
Ephemeroptera	Heptageniidae	<i>Cinygmula</i>	X	X	
Ephemeroptera	Heptageniidae	<i>Epeorus</i>	X	X	
Ephemeroptera	Heptageniidae	<i>Heptagenia</i>		X	
Ephemeroptera	Heptageniidae	<i>Maccaffertium</i>	X	X	X
Ephemeroptera	Heptageniidae	<i>Stenacron</i>	X		X
Ephemeroptera	Isonychiidae	<i>Isonychia</i>		X	X
Ephemeroptera	Leptophlebiidae	<i>Choroterpes</i>	X		
Ephemeroptera	Leptophlebiidae	<i>Paraleptophlebia</i>	X		X

Note: Siphonurus and Pseudocloeon reported by Sturm Env. are likely erroneous identifications. These genera have been excluded from this list.

Stoneflies (Plecoptera) also represent an important group of aquatic insects in the structure and functioning of stream ecosystems. Stoneflies also fill important trophic roles in stream ecosystems, as displayed by their detritivory (consumption of dead or decaying organic matter) and predatory functional feeding group designations. As with mayflies, stoneflies are valued and imitated by fly-fishermen and serve as an abundant food source for many salamanders and fishes. Stoneflies are primarily stenothermic, meaning they inhabit cool to cold waters which provide the higher dissolved oxygen concentrations required for their survival. Table 2 presents the stonefly genera identified in the Spruce No. 1 Mine area.

Table 2. Presence/absence of stonefly genera in the permit area.

Order	Family	Genus	Oldhouse	Pigeonroost	Seng Camp
Plecoptera	Capniidae	<i>Allocaenia</i>	X	X	X
Plecoptera	Chloroperlidae	<i>Alloperla</i>		X	
Plecoptera	Chloroperlidae	<i>Haploperla</i>	X		
Plecoptera	Chloroperlidae	<i>Sweltsa</i>	X		
Plecoptera	Leuctridae	<i>Leuctra</i>	X	X	X
Plecoptera	Nemouridae	<i>Amphinemura</i>	X	X	
Plecoptera	Nemouridae	<i>Ostrocerca</i>	X	X	
Plecoptera	Nemouridae	<i>Paranemoura</i>		X	
Plecoptera	Peltoperlidae	<i>Peltoperla</i>	X		X
Plecoptera	Perlidae	<i>Acroneuria</i>	X	X	X
Plecoptera	Perlidae	<i>Isoperla</i>	X		X
Plecoptera	Perlidae	<i>Remenis</i>		X	
Plecoptera	Perlidae	<i>Yugus</i>	X		
Plecoptera	Pteronarcyidae	<i>Pteronarcys</i>	X	X	X
Plecoptera	Taeniopterygidae	<i>Taenionema</i>		X	
Plecoptera	Taeniopterygidae	<i>Taeniopteryx</i>		X	X

Note: Podmosta, Paraleuctra, Megaleuctra, and Beloneuria reported by Sturm Env. are likely erroneous identifications. These genera been excluded from this list.

2. Salamanders

The ecoregion where the Spruce No. 1 project is located contains one of the richest salamander fauna in the world (Petranka 1998, Stein et al., 2000). Nearly ten percent of global salamander diversity is found within streams in the ecoregion (Green and Pauley, 1987). Salamanders are a diverse and unique form of Appalachian wildlife that depend on forested headwater habitat and decline or disappear from surface mined areas. Many species of salamanders are aquatic or semi-aquatic and utilize headwater streams at some point in their life histories. Most of the species found in the project area are water-dependent and belong to the family Plethodontidae, the lungless salamanders, which require high moisture retaining leaf-litter, dense shade, and cool flowing streams to survive and reproduce. Typically, salamanders occupy small, high-gradient headwater streams while fish occur farther downstream.

Salamanders are an important ecological component in the mesic (medium precipitation) forests of the ecoregion and are often the most abundant group of vertebrates in both biomass and number (Burton and Lykens, 1975; Hairston, 1987). Ecologically, salamanders are intimately associated with forest ecosystems acting as predators of small invertebrates and serving as prey to larger predators (Pough et al., 1987). Some species of salamanders split their lives between forests and headwaters and depend on a close connection to move between the two (Petranka, 1998).

Moler and Franz (1987) cite the work of Burton and Likens (1975) and Gosz et al. (1978) in New Hampshire who suggest an important role for amphibians in energy cycling. Burton and Likens (1975) found that the biomass of salamanders was about double that of birds during the peak birding season and about equal to the biomass of small mammals. Gosz et al. (1978) found that salamanders and shrews were the most important vertebrates preying on the invertebrates of the forest floor. They estimated that birds consumed 6.5 times, and shrews 4.7 times, the amount of food energy consumed by the salamander community. However, because the warm-blooded birds and shrews expended 98% of their energy intake on metabolic maintenance compared to only 40% for the salamanders, salamanders contribute 4.6 (shrews) and 6.3 (birds) times as much biomass to the available prey base, making them an important component of the foodweb.

With respect to the immediate project area, stream-dwelling salamanders have been surveyed in White Oak Branch (USFWS, unpublished data, 2004). White Oak Branch had good numbers of Northern Dusky (9 adult, 7 larvae), Appalachian Seal (15 adult, 12 larvae), and Two Lined salamanders (1 adult and 15 larvae). These numbers represent densities in a 12 square meter plot that includes dry and wetted portions of the stream channel. Because Oldhouse Branch and Pigeonroost Branch are very close geographically and have similar features as White Oak Branch, salamander populations in Pigeonroost and Oldhouse Branch can be expected to be similar to those in White Oak Branch. Williams (2003) found mean densities within reference reaches of Pigeonroost, Bend Branch (another tributary of Spruce Fork), and Ash Fork (a tributary of Gauley River) at more than six salamanders per square meter. In the Williams' study, the majority of the total catch of salamanders was found in Pigeonroost.⁸ Using these numbers from White Oak Branch and Pigeonroost, EPA estimates aquatic salamanders are indeed abundant (~5-6 per square meter) along stream channels in Pigeonroost Branch and Oldhouse Branch.

⁸ Williams (2003) data from the WV MTM region also showed that while more individuals were found in the lower 1st-2nd order reaches, slightly more species (8 spp.) were actually found in the upper intermittent reaches.

3. Fish

Fish communities change with watershed size and respond to gradients of physical habitat and chemistry. The fish assemblages in Pigeonroost Branch and Oldhouse Branch are typical of headwater streams, containing only a few species. The fish assemblages in Spruce Fork are in relatively good condition. Spruce Fork is a locally important rock bass and smallmouth bass fishery. These fish assemblages are not representative of pristine conditions and it is likely that some of the more sensitive species may have been historically extirpated from past anthropogenic activities, including mining.

In an analysis of fish community data from Spruce Fork, Region III assessed the small streams immediately impacted by the Spruce No. 1 permit and three reaches of Spruce Fork: 1) Upstream of Seng Camp, 2) Seng Camp to Spruce Laurel, and 3) Downstream of Spruce Laurel. Other data analyzed included data collected for the Programmatic Environmental Impact Statement (PEIS) for Mountaintop Mining/Valley Fills. (see Stauffer and Ferreri, 2002 and Fulk et al. 2003); unpublished data included in the West Virginia Department of Natural Resources database (including USEPA, WVDNR, and consulting firm data); and data from Decota Consulting (consultants for Mingo Logan) supplied to the WVDNR collecting permit program. The data consisted of samples that were intended for community assessment and were judged to have sufficient numbers of individuals to render a fair assessment. Fish community data can be difficult to analyze and oftentimes the absence of species may be due to zoogeography (how they were distributed in response to past geological events) or due to stressors over time in the watershed. Some of these stressors may still be apparent and some may not.

The fish found in Pigeonroost Branch, Oldhouse Branch, and White Oak Branch are typical of small streams in the Coal River Basin. They do not indicate impairment, nor do they indicate reference conditions. EPA compared samples collected for the PEIS in 1999 and more recent data collected by Decota Consulting from 2008 and 2009. When sampled for the PEIS, Pigeonroost Branch had been affected by drought and only blacknose dace and creek chubs were present. These species are tolerant of disturbance and are headwater species adapted to drought. White Oak Branch also was sampled for the PEIS at the same time. It too was drought-affected and contained only blacknose dace at the time of the PEIS sampling in 1999. No samples were collected in Oldhouse Branch for the PEIS.

More recent data indicates that Pigeonroost Branch also has a population of mottled sculpin, and at times smallmouth bass and stonerollers. More recent data from White Oak Branch indicates that creek chubs are also present in good numbers and mottled sculpin are rare (only 1 individual captured). Data from Oldhouse Branch indicates that blacknose dace and creekchubs are the only species present.

For the PEIS, Fulk et al. (2003) used the Mid-Atlantic Highlands (MAHA) Index of Biotic Integrity (IBI - a multi-metric index used to assess biotic health), with some minor modification, to assess the impacts of MTM/VF to fish assemblages. Using this same

index, the assemblage upstream of Seng Camp Creek ranged from fair to excellent condition.

The fish assemblage in the mainstem of Spruce Fork is in relatively good condition. Spruce Fork is a locally important rock bass and smallmouth bass fishery. Rock Bass and Smallmouth Bass are moderately sensitive gamefish species. While sampling Spruce Fork in 2010, recreational fishing was observed in the lower reaches of the stream and there was evidence of fishing in the upper reaches as well. Species present in Spruce Fork upstream and downstream of Seng Camp Creek are typical of streams of this size within the Coal River Basin and have not changed appreciably over the last 60 years.

4. Birds⁹

Many terrestrial bird species depend on the headwater streams like those of the Spruce Fork for their survival. The ecotone (transition area) between terrestrial and aquatic habitats results in diverse flora and fauna. For example, unique avifauna assemblages can be found along the riparian zone of headwater streams.

Among the many migratory birds likely to breed in the project area, there are six species that the USFWS has designated as Birds of Conservation Concern (BCC) within the Appalachian Mountains Bird Conservation Region (AMBCR). These include the cerulean, Kentucky, Swainson's and worm-eating warblers, the wood thrush, and the Louisiana waterthrush. The first five of these are also designated as BCC species within the USFWS's Northeast Region as a whole and nationally (USFWS 2008). The first four are also considered to be among the 100 most at-risk bird species in North America (Wells 2007).

The Louisiana waterthrush (*Seiurus motacilla*), a neotropical migrant song bird, is considered an obligate headwater riparian songbird (an example of water-dependent wildlife) because its diet is comprised predominantly of immature and adult aquatic macroinvertebrates found in and alongside headwater streams and because it builds its nest in the stream banks. Breeding waterthrushes nest and forage primarily on the ground along medium- to high-gradient, first- to third-order, clear, perennial headwater streams flowing through closed-canopy forest. Good water quality is a key component of the species breeding habitat. Headwater streams like Pigeonroost Branch and Oldhouse Branch that support healthy macroinvertebrate communities are food sources for species such as the Louisiana waterthrush.

The Appalachian Mountain Bird Conservation Region (AMBCR), which extends from southeastern New York south to northern Alabama, is thought to support a substantial portion of the Louisiana waterthrush's breeding population, perhaps as much as 45 percent. West Virginia, the only state that lies entirely within the AMBCR, encompasses the largest contiguous area of high relative breeding abundance over the species' entire breeding range, based on North American Breeding Bird Survey (BBS) data from 1994-

⁹ Much of the discussion related to avian and bat species is based upon communications with the U.S. Fish and Wildlife Service.

2003. The West Virginia population may serve as a source for populations elsewhere in the breeding range. The Louisiana waterthrush is also an area-sensitive species, requiring undisturbed forest tracts of 865 acres to sustain a population (Robbins, C.S., J.R. Sauer, R.S. Greenburg, and S. Droege. 1989). The most effective management protocol for the Louisiana waterthrush would appear to be protection of forest tracts and water systems inhabited on both breeding and wintering areas particularly moderate- to high-gradient headwater streams, which compose 75-80% of stream length in a typical watershed.

Bird species that rely on mature forest habitats that are on the Audubon watch list as declining species and are listed as probable in the area include the Swainson warbler (*Limnothlypis swainsonii*), Kentucky warbler (*Oporornis formosus*), and Cerulean warbler (*Dendroica cerulean*).

The Cerulean warbler in particular is considered an area-sensitive species; it is thought to require large (greater than 30 sq miles) tracts of mature interior forest habitat to support stable breeding populations. This species is a canopy-foraging insectivorous neotropical migrant songbird that breeds in mature deciduous forests with broken, structurally-diverse canopies across much of the eastern United States and winters in middle elevations of the Andes Mountains of northern South America. Important among a number of breeding season constraints are the loss of mature deciduous forest, particularly along stream valleys, and fragmentation and increasing isolation of remaining mature deciduous forest. The cerulean warbler appears to be more sensitive than most other North American birds to landscape-level changes in habitat. The USFWS has designated the cerulean warbler a Species of Management Concern and a Species of Conservation Concern throughout its range. It has also been preliminarily designated by the Appalachian Mountains Joint Venture as a Species of Highest Conservation Priority within the Appalachian Mountains Bird Conservation Region, which encompasses West Virginia. The AMBCR is thought to support about 80 percent of the species' entire breeding population, and the AMBCR breeding population likely functions as a source for populations elsewhere in the breeding range.

The Acadian flycatcher (*Empidonax vireescens*) is commonly encountered throughout the Central Appalachian Ecoregion, but despite the large expanse of existing forest habitat, it is primarily restricted to forested tracts with understory vegetation along small headwater streams, where it can feed on emergent aquatic insects. Spruce Fork and its tributaries meets these habitat requirements. Neotropical migrant songbirds are also often attracted to headwater streams for breeding areas because of the diversity of the habitat and the availability of emergent aquatic insects.

5. Bats

Thirteen species of bats are found in West Virginia. Most North American bats are insectivorous, which capture their prey by foraging in flight, catching flying insects from a perch, or collecting insects from plants.

Different species of bats often have distinct life history traits and behaviors. Some bats

are solitary and hang in tree foliage, attics, barns, and other protected places during the day. Other bats are colonial and cluster in caves and mine tunnels. Bats have one of the slowest reproductive rates for animals their size. Most bats in northeastern North America have only one or two pups a year and many females do not breed until their second year. This low reproductive rate is somewhat offset by a long life span, often over 20 years. The little brown bat, common in North America and in West Virginia, is the world's longest lived mammal for its size, with a maximum life-span over 32 years. During the winter, some bats migrate south in search of food, while others hibernate through the cold weather when insects are scarce. Bats that do migrate usually travel less than 200 miles, often following the same routes as migratory birds.

Species that have potential to be found in the area of south-Central West Virginia that encompasses the Spruce No. 1 Mine include the northern bat (*Myotis septentrionalis*), big brown bat (*Eptesicus fuscus*), red bat (*Lasiurus borealis*), eastern small-footed bat (*Myotis leibii*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*), northern long-eared bats (*Myotis septentrionalis*) and the Indiana bat (*Myotis sodalis*).

Both the Indiana and Virginia big-eared bats are listed as endangered under the Endangered Species Act. The USFWS was also recently petitioned to list the eastern small-footed bats and the northern long-eared bats under the ESA. Five eastern small-footed bats and 16 northern long-eared bats were captured during mist net surveys conducted at the Spruce No. 1 project site in 2004, representing 7.6 and 24.2 percent, respectively, of all bats captured (U.S. Army Corps of Engineers Huntington District 2006, DEIS Spruce No. 1 Mine. Appendix M).

Indiana bats have been described as once one of the most common mammals in the Eastern United States. Between 1960 and 2004, biologists have documented a 56 percent population decline in Indiana bats. Indiana bats feed solely on emerged aquatic and terrestrial flying insects. They are habitat generalists and their selection of prey reflects the environment in which they forage. In a study in the Allegheny Mountains, activity in non-riparian upland forest and forests in which timber harvest had occurred was low relative to forested riparian areas. This evidence suggests that the forested riparian zones of the project area would be more suitable habitats for Indiana bat populations than active or restored mining sites.

Mist net surveys were conducted in the project area in 2000 and 2004, and no Federally-listed bats were captured. Although the capture of bats confirms their presence, failure to catch bats does not absolutely confirm their absence (U.S. Fish and Wildlife Service 2007, pg. 252). The project area occurs roughly half-way between known hibernacula in northeastern Kentucky and southeastern West Virginia. Since the most recent surveys at the Spruce No. 1 site, maternity roosts have been documented in central and north-central Boone County. Additionally, a juvenile Indiana bat was captured on August 9, 2010 in southwest Fayette County, indicating the presence of a maternity colony in that area.

C. Summary

Based on the foregoing, EPA Region III finds that Pigeonroost Branch and Oldhouse Branch contain important wildlife resources and habitat. The Region bases its conclusion on several factors including the similarity of Pigeonroost Branch and Oldhouse Branch to the reference quality White Oak Branch and therefore they support conditions representing some of the last remaining least degraded streams and riparian areas within the Spruce Fork sub-watershed and the Coal River sub-basin.

V. Basis for Recommended Determination

A. Section 404(c) Standards

Section 404(c) provides:

The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.

While EPA strongly prefers to initiate the Section 404(c) process prior to issuance of a permit, Section 404(c) and EPA's implementing regulations authorize EPA to initiate the Section 404(c) process after a permit has been issued by withdrawing specification of a disposal site. See 40 CFR 231.1(a); see also definition of "withdraw specification," 40 CFR 231.2(a). In this case, consistent with Section 404, Pigeonroost Branch and Oldhouse Branch were specified as disposal sites in DA Permit No. 199800436-3.

Section 404(c) does not define the term "unacceptable adverse effect." EPA's regulations at 40 CFR 231.2(e) define "unacceptable adverse effect" as:

Impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the Section 404(b)(1) Guidelines (40 CFR Part 230).

For purposes of the Spruce No. 1 mine, the relevant portions of the Section 404(b)(1) Guidelines that are particularly important for assessing the unacceptability of environmental impacts include:

- Less environmentally damaging practicable alternatives (230.10(a))

- Water quality impacts (230.10(b))
- Significant degradation of waters of the United States (230.10(c))
- Minimization of adverse impacts to aquatic ecosystems (230.10(d))
- Cumulative effects (230.11(g)); and
- Secondary effects (230.11(h))

The purpose of the Clean Water Act is to “restore and maintain the physical, chemical, and biological integrity of the Nation’s waters.” 33 U.S.C. 1251(a). Part of the concept of protecting the “biological integrity” of the Nation’s waters is protection of the indigenous, naturally occurring community. This goes beyond protecting the function performed by various members of the aquatic community and extends to protection of the quality of the aquatic community itself. *See Alameda Water & Sanitation District v. EPA*, 930 F. Supp.486 (D. Colo. 1996).

B. Adverse impacts from specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material from the Spruce No. 1 Mine

The impacts from the specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material from the Spruce No. 1 Mine will occur through several different pathways.

First, direct impacts will occur as a result of the discharge of fill (excess spoil, mine through, and construction of valley fills), which will bury much of Pigeonroost Branch and Oldhouse Branch and eliminate the buried ecosystems, including all wildlife living in those streams. Burial of Pigeonroost Branch and Oldhouse Branch also will eliminate habitat for wildlife that depend upon those streams. Loss of the buried portions of Pigeonroost Branch and Oldhouse Branch will impact wildlife that depend on those headwater streams for all or part of their lifecycles and adversely affect adults, juveniles, larvae, and/or eggs.

In addition, adverse impacts will occur to wildlife that live outside the footprint of the fills and sedimentation ponds. Discharges of fill material into Pigeonroost Branch and Oldhouse Branch will have the effect of removing those streams as sources of freshwater dilution and adversely affect the delivery of headwater stream ecosystem functions to downstream waters. Studies have shown a strong correlation between the construction of valley fills for surface coal mining in Appalachia and significant adverse impact on downstream macroinvertebrate communities.

There is also a likelihood that the discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch will transform those areas into sources of contaminants (particularly conductivity and selenium) contributing to degradation of downstream waters. The project as authorized also has the potential to contribute to conditions that would support blooms of golden algae that release toxins that can kill fish and other aquatic life.

To evaluate the impacts of the Spruce No. 1 project, Region III has consulted the PEIS and available data and literature documenting impacts from similar projects. Region III also has examined impacts caused by the portion of the Spruce No. 1 Mine that has already been

constructed in the Seng Camp Creek watershed (specifically, Valley Fill 1A). In addition, Region III reviewed the nearby Mingo Logan Dal-Tex operation. Based on location and similarity of geology and minerals, impacts from the Mingo Logan Dal-Tex operation are likely to be a good predictor of impacts from the Spruce No. 1 Mine. This was acknowledged by the Huntington District Corps of Engineers in the Spruce No. 1 EIS, which stated: “The past and present impacts to topography, geology, and mineral resources of the previous mining along the western side of Spruce Fork are similar to the anticipated impacts of the Spruce No. 1 Mine, as mining is to occur in the same strata.”

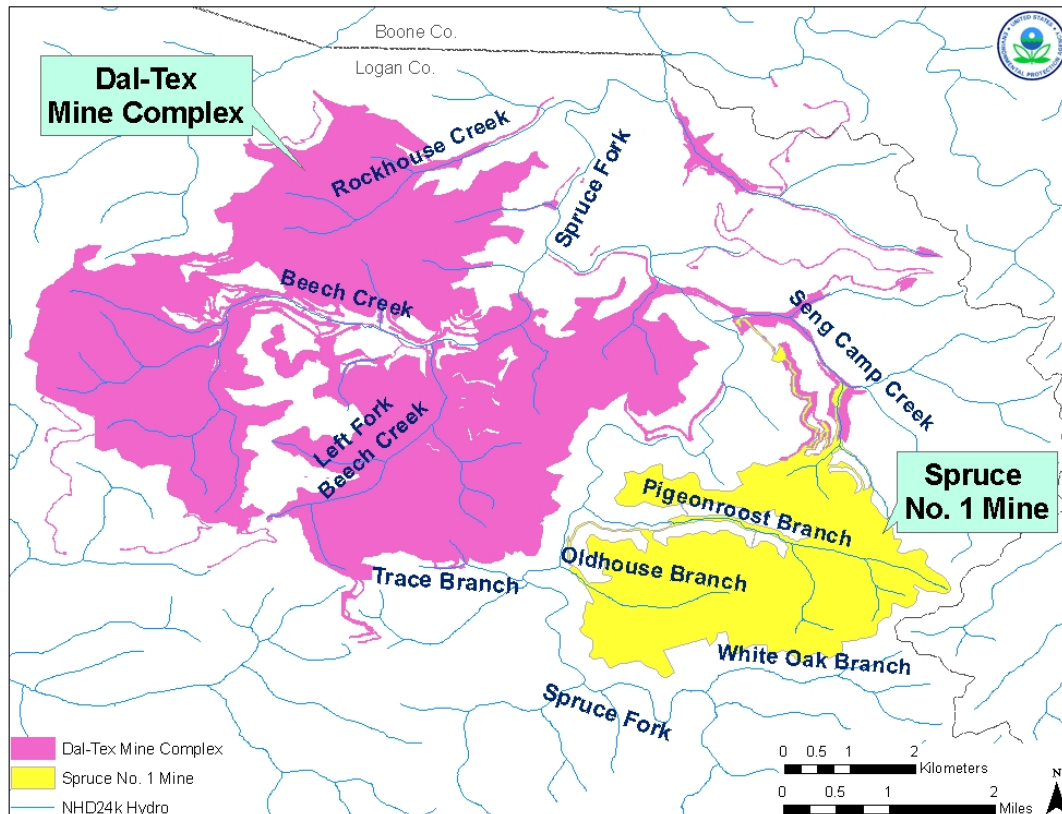


Figure 7 Spruce No. 1 Mine and the Dal-Tex Mine Operation

Region III completed a review of rock cores and corresponding cross sections for the Dal-Tex mines including the Gut Fork mine (immediately across Spruce Fork from Spruce No.1; Figure 7) and compared those to the Spruce No. 1 mine. This review, which is set forth in Appendix 4, indicates that, for the most part, the formations are repeated from the Dal-Tex mine complex to the Spruce No 1 mine location. Per the EIS, the same coal beds are to be developed for the Spruce No. 1 mine as for the Del-Tex mine. Also, these coal bed sequences are similar to those described in the literature for southern West Virginia coal bed sequences and the geologic column for the Spruce No 1 mine.

1. Effects on Water Chemistry

The Section 404(b)(1) Guidelines direct that no permit should issue if the discharge will cause or contribute to violations of applicable water quality standards or if the discharge will cause or contribute to significant degradation of the aquatic ecosystem, including but not limited to significant adverse effects on stages of aquatic life and other wildlife dependent upon aquatic ecosystems, including the transfer concentration, and spread of pollutants or their byproducts outside the disposal area. 40 C.F.R. §§230.10(b)(1) & 230.10(c). *See also* 40 C.F.R. §§ 230.31.

Adverse changes in water chemistry frequently have a corresponding impact on wildlife and fisheries that live in or depend upon the water. Potential impacts to water chemistry are considered because they may affect the native aquatic and water-dependent communities in the Spruce Fork watershed.

a. Selenium

Discharges from the Spruce No. 1 Mine Complex project are likely to increase selenium loading to the immediate receiving streams and downstream waters. The State of West Virginia has established a numeric chronic water quality criterion for selenium (5 µg/L) to protect instream aquatic life. Selenium is a naturally occurring chemical element that is an essential micronutrient, but excessive amounts of selenium can also have toxic effects. For aquatic animals, the concentration range between essential and toxic is very narrow, being only a few micrograms per liter in water. Selenium toxicity is primarily manifested as reproductive impairment and birth defects due to maternal transfer, resulting in embryotoxicity and teratogenicity in egg-laying vertebrates (e.g., fish and ducks). The most sensitive toxicity endpoints in fish larvae are teratogenic deformities such as skeletal, craniofacial, and fin deformities, and various forms of edema. Embryo mortality and severe development abnormalities can result in impaired recruitment of individuals into populations (Chapman et al. 2009). A WV draft study indicates that elevated selenium concentrations in fish eggs, increased larval deformity rates and increased deformity rates in mature fish are occurring in the Mud River Reservoir, Boone County, WV due to mining activities. These adverse conditions were all associated with elevated water column selenium concentrations (WVDEP, 2009, draft).

In West Virginia, coals that contain the highest selenium concentrations are found in a region of south central West Virginia where the Allegheny and Upper Kanawha Formations of the Middle Pennsylvanian are mined (WVGES 2002). WVDEP reports that some of the highest coal selenium concentrations are found in the central portion of the Coal River watershed where significant active mining and selenium impaired streams are located, in the immediate vicinity of the Spruce No. 1 project. Selenium is discharged when surface mining activities expose selenium-bearing material that comes in contact with water and contaminated water drains from the mining area to surface waters. The sedimentation ponds that are the usual form of water treatment at mining sites generally are not effective at treating selenium before effluent is discharged from ponds to downstream waters.

To evaluate the impact of discharges into Pigeonroost Branch and Oldhouse Branch as authorized by the DA Permit, Region III has compared selenium levels in Pigeonroost Branch and Oldhouse Branch with selenium levels in waters that have been impacted by the nearby Dal-Tex operation.¹⁰ In addition, Region III has reviewed data from discharge monitoring reports from mining outlets for the portion of the Spruce No. 1 Mine that has been constructed in the Seng Camp Creek watershed. Figure 8 shows mine outlet locations.

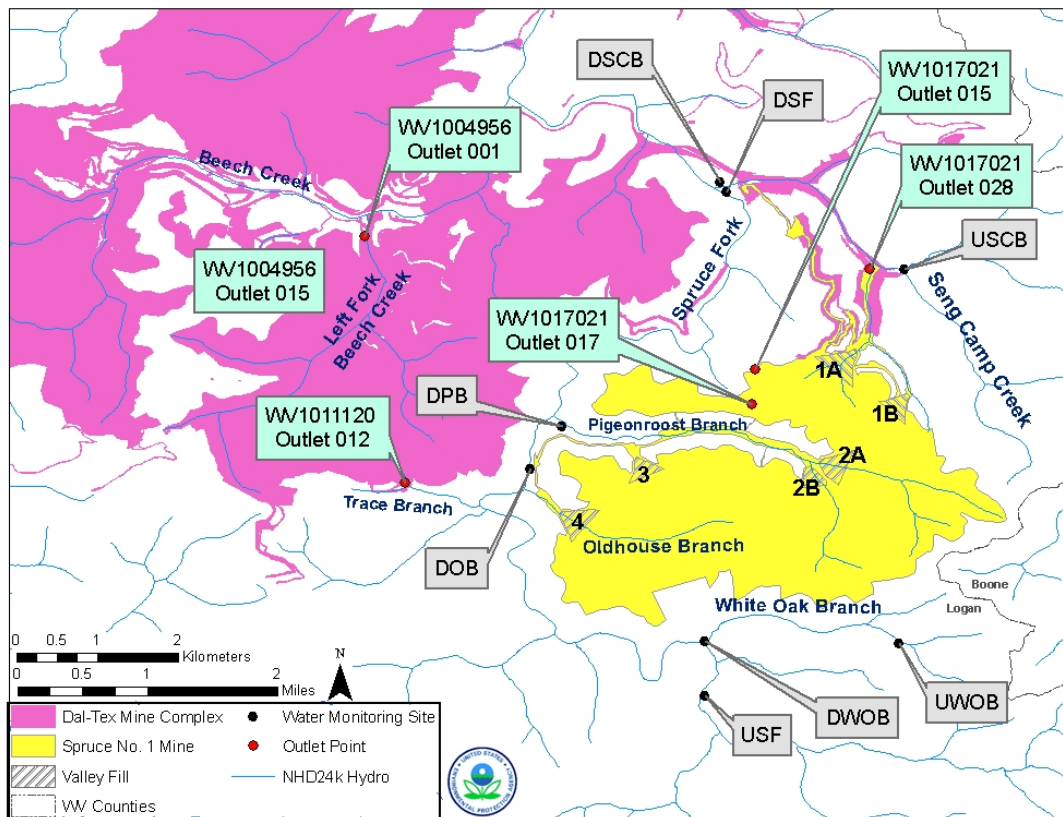


Figure 8: Dal-Tex and Spruce No. 1 Mine outlet locations.

¹⁰ Levels of selenium in other nearby waters that have been impacted by surface coal mining activity and generally have similar geology also support a prediction that construction of the Spruce No. 1 Mine as currently authorized will result in elevated levels of selenium in downstream waters. Selenium concentrations have exceeded the Se criterion at least three times in six (6) other mined streams in the Coal River Sub-basin. These include White Oak Creek (a tributary to the Coal River), the left Fork of White Oak Creek, Seng Creek (another tributary to the Coal River); and Casey Creek, James Creek, and Beaver Pond Branch, all tributaries to Pond Fork. These elevated levels of selenium demonstrate that the geology in the area of the Spruce No. 1 mine is likely to release selenium during mining activities. See Appendix 2 for further details on selenium.

Table 3 provides a summary of selenium averages and ranges for Pigeonroost Branch and Oldhouse Branch and streams draining the nearby Dal-Tex operation (Left Fork Beech Creek, Beech Creek, and Trace Branch). The table also contains data for White Oak Branch (upstream of Spruce No. 1 as currently authorized) and Seng Camp Creek (receiving water for the portion of Spruce No. 1 that is under construction).

Summarizing the data in the following table, streams draining the nearby Dal-Tex operation have selenium concentrations exceeding the 5 ug/l chronic selenium numeric criterion. The data from the Dal-Tex mine complex do not indicate any decrease in selenium concentrations over the period of record. These data strongly suggest construction of valley fills and other discharges of fill material from the Spruce No. 1 Mine into Pigeonroost Branch and Oldhouse Branch would likely result in discharges of elevated levels of selenium in the receiving waters and lead to significant degradation of water quality of the receiving waters and downstream waters. Such degraded water quality would be likely to impact downstream wildlife populations, including fish population

Table 3. Selenium Concentrations (ug/l) Near Spruce No. 1 Project Area

Stream Name		Source and time period of data					
	Subbasin	PEIS (2000-2001)		WVDEP (2002-2003)		WVDEP (2005-2006)	
		Se (avg)	Se (range)	Se (avg)	Se (range)	Se (avg)	Se (range)
Average and Range of Se in Tribs to Spruce Fork that drain Spruce No. 1 project area							
White Oak Branch	Spruce Fork	<3 ND		<5 ND		NS	
Oldhouse Branch	Spruce Fork	<3 ND		<5 ND		NS	
Pigeonroost Branch	Spruce Fork	<3 ND		<5 ND		NS	
Seng Camp Creek	Spruce Fork	NS		<5 ND		NS	

Average and Range of Se in Tribs to Spruce Fork draining Dal-Tex Operation							
Beech Creek ¹¹	Spruce Fork	7.5	5.6-9.5	6	5.0-9.0	12.3	6.0
Left Fork of Beech Creek	Spruce Fork	22.7	15.3-31.1	22	5.0-53.0	NS	
Trace Branch	Spruce Fork	NS	NS	7	5.0-10.0	NS	
Rockhouse Branch	Spruce Fork	5.3	3.8-8.0	< 5 ND	< 5 ND	NS	

ND: Se not detected. Detection limit shown.

NS: Not sampled. Stream was not sampled for the study shown.

Graphical trends of selenium concentrations from Discharge Monitoring Report (DMR) records for January 2007 to June 2010 from three outfalls from the Dal-Tex Mine Operations are shown in the following Figures 9-11. These demonstrate that the discharges from those outfalls consistently exceed West Virginia's chronic numeric water quality criterion for selenium (5 µg/L).

¹¹ In the WVDEP study on selenium bioconcentration factors, selenium was also found in fish tissue in Beech Creek (average 7.55 mg/kg).

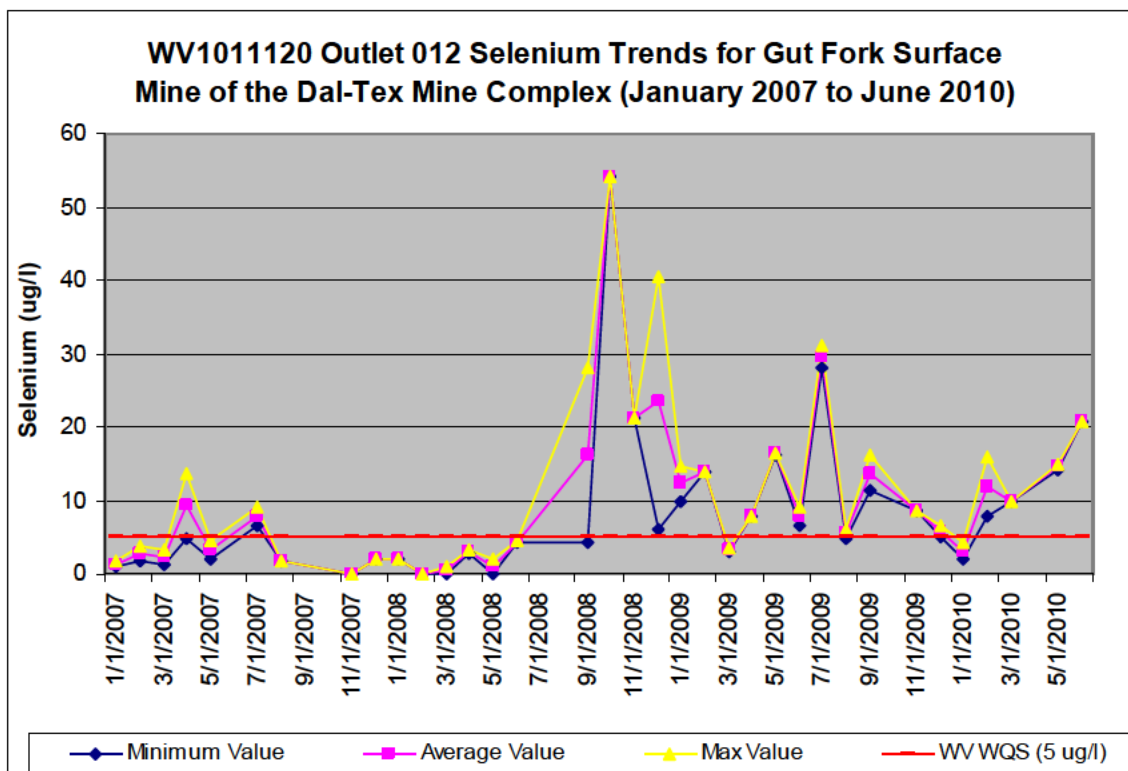


Figure 9: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1011120 – Outlet 012 (Mingo Logan Coal Company's Gut Fork Surface Mine of the Dal-Tex Mine Complex)

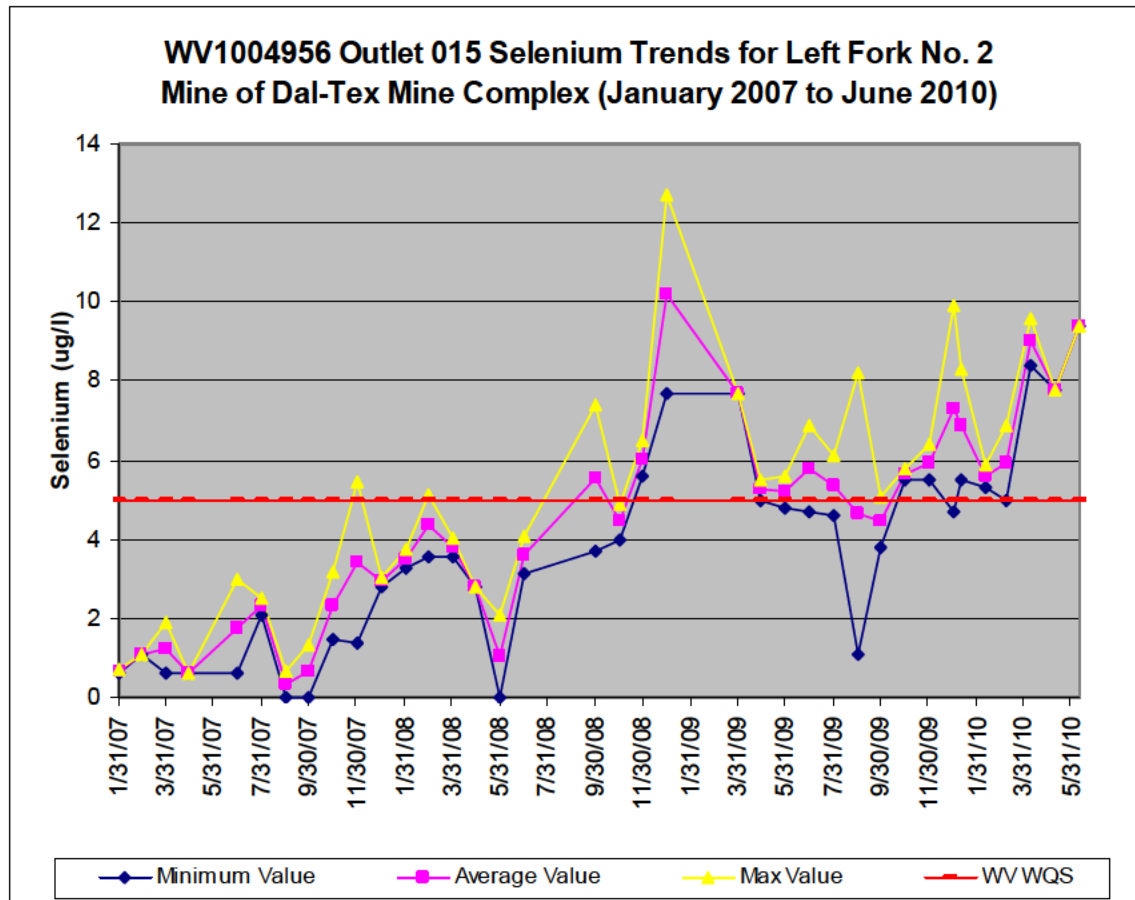


Figure 10: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1004956 – Outlet 015 (Mingo Logan Coal Company’s Left Fork No. 2 Mine of the Dal-Tex Mine Complex)

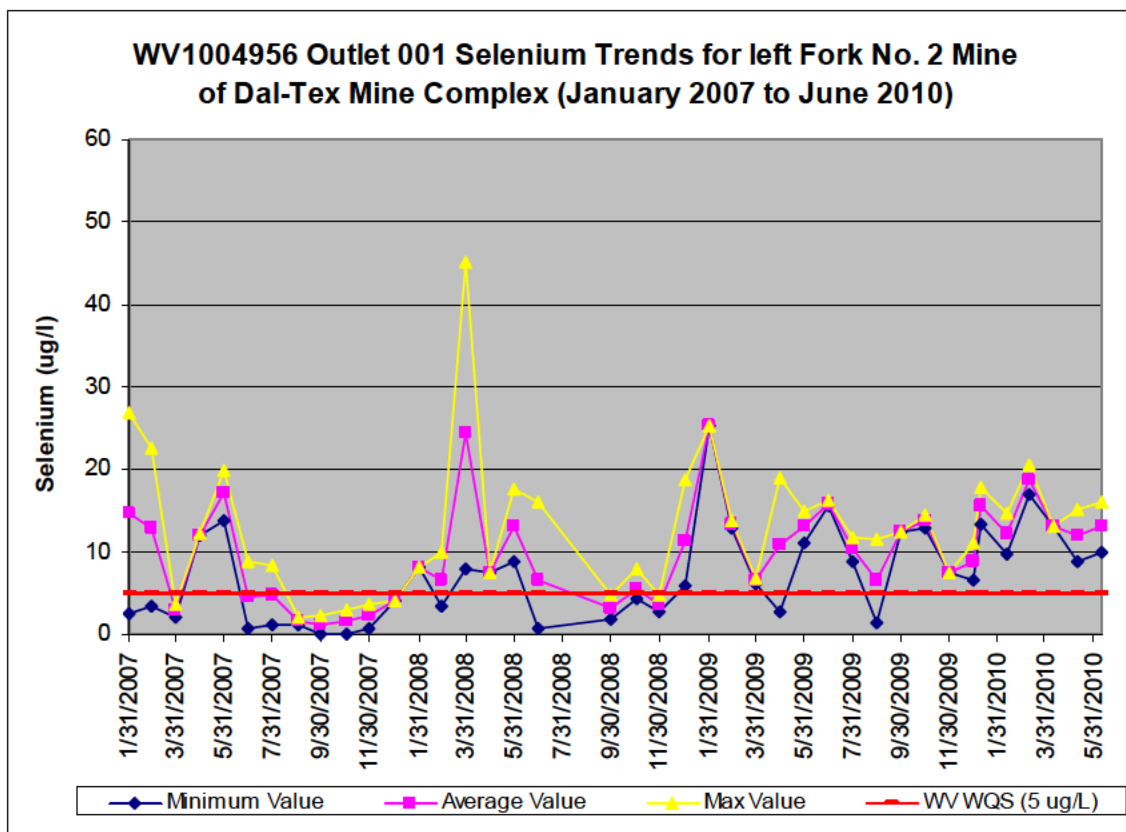


Figure 11: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1004956 – Outlet 001 (Mingo Logan Coal Company’s Left Fork No. 2 Mine of the Dal-Tex Mine Complex)

Region III also reviewed data from the portion of the Spruce No. 1 Mine that is already constructed in Seng Camp Creek (Figure 12). These data also indicate that construction of valley fills in Pigeonroost Branch and Oldhouse Branch would likely result in discharges of elevated levels of selenium. The Spruce No. 1 project has active mining in the Right Fork of the Seng Camp Creek sub-watershed. Recent NPDES DMRs for a 16 month period (December 2008 to March 2010) show that the constructed portion of the Spruce No. 1 project (Outlet 028) is discharging selenium at concentrations that exceed West Virginia’s chronic numeric water quality criterion (Table 4).¹² A technical review of the submitted 16 monthly DMR records for the Spruce No. 1 Outlet 028 document the maximum values exceeded the chronic selenium water quality criteria of 5 µg/L on six occasions (December 2008, January 2009, August 2009, September 2009, February 2010, and March 2010) representing a 37.5% exceedance rate. In addition, the average monthly measurements during this same time frame for Outlet 028 exceeded the chronic water quality criterion on 4 of the 16 monthly DMR reports (December 2008, January 2009, September 2009, and March 2010) representing a 25% exceedance rate of the WV

¹² The July 2009 DMR was not provided for review.

chronic water quality criterion for selenium. Selenium concentrations in excess of the chronic criterion were also reported from Outlet 017.¹³

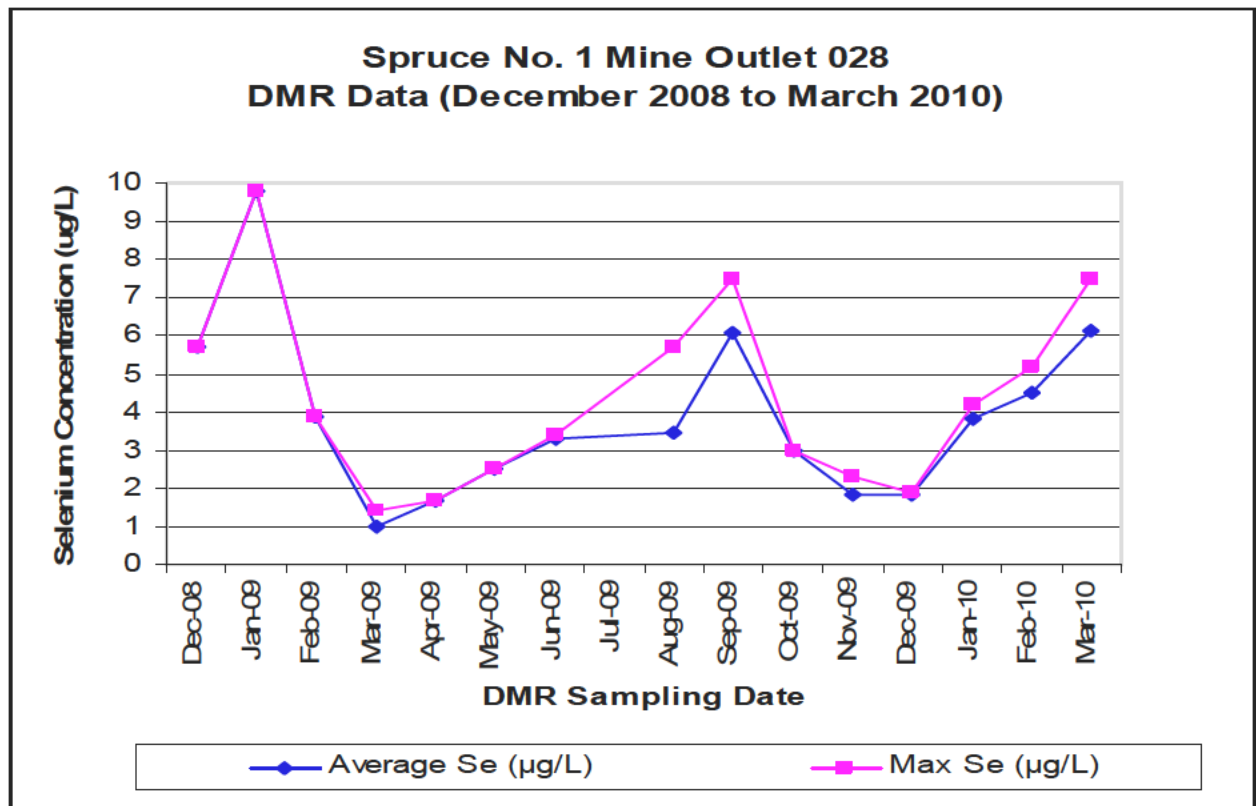


Figure 12: Selenium concentrations in discharge from outlet 028 on Spruce No. 1 Mine

¹³ To the extent that commenters have stated that selenium discharges should be addressed only through the NPDES permit, the Section 404(b)(1) Guidelines provide an independent obligation to assure compliance with water quality standards (40 CFR 230.10(b)). Moreover, it is noted that the NPDES permit issued for the Spruce No. 1 project establishes effluent limitations for selenium in only three of the outfalls in the NPDES permit. The permit requires only monitoring at the remaining outfalls, including the outfalls in Seng Camp Creek discussed herein. To the extent the Company has commented that the impacts from the Dal-Tex operation are not a good predictor of selenium impacts from construction of Spruce No. 1 due to implementation of a materials handling plan at Spruce No. 1, it is noted that the materials plan as being implemented by Mingo Logan in the Seng Camp Creek watershed has not fully succeeded in preventing exceedance of the numeric water quality criterion for selenium at Outfalls 17 and 28. Moreover, the Arch corporate family, including Mingo Logan, has conceded that its efforts to control selenium at a number of its active surface coal mines in West Virginia have been unsuccessful. Arch's various subsidiaries recently have requested extensions of NPDES compliance schedules for selenium discharges at numerous facilities, further indicating challenges in meeting the WV chronic criterion.

Table 4. Total Recoverable Selenium (µg/L) for Outlets 015, 017 and 028 for NPDES Permit WV1017021, Mingo Logan Coal Company Spruce No. 1 Mine. Note: Shaded areas indicate exceedences of the selenium standard (5 µg/L).

Site Code	Site Location	Sample Date	Min Value	Ave. value	Max value
015	Outlet 015	12/31/2008	0.00	0.00	0.00
017	Outlet 017	12/31/2008	0.00	0.00	0.00
017	Outlet 017	9/30/2009	19.20	19.20	19.20
028	Outlet 028	12/31/2008	5.70	5.70	5.70
028	Outlet 028	1/31/2009	9.80	9.80	9.80
028	Outlet 028	2/28/2009	3.90	3.90	3.90
028	Outlet 028	3/31/2009	0.60	1.00	1.40
028	Outlet 028	4/30/2009	1.70	1.70	1.70
028	Outlet 028	5/31/2009	2.50	2.50	2.50
028	Outlet 028	6/30/2009	3.20	3.30	3.40
028	Outlet 028	8/31/2009	1.25	3.48	5.70
028	Outlet 028	9/30/2009	4.60	6.05	7.50
028	Outlet 028	10/31/2009	3.00	3.00	3.00
028	Outlet 028	11/30/2009	1.40	1.85	2.30
028	Outlet 028	12/31/2009	1.80	1.85	1.90
028	Outlet 028	1/31/2010	3.40	3.80	4.20
028	Outlet 028	2/28/2010	3.80	4.50	5.20
028	Outlet 028	3/31/2010	4.70	6.10	7.50

The Spruce Fork watershed upstream of Pigeonroost Branch and Oldhouse Branch has selenium concentrations elevated above the chronic water quality criterion based on the instream DMR data. See Appendix 2, Table 14. The downstream Spruce Fork (DSF) site does not have selenium concentrations above the water quality criterion. This suggests that Pigeonroost Branch and Oldhouse Branch provide clean dilution water to the mainstem of Spruce Fork (Appendix 2, Table 15). The proposed valley fills for Pigeonroost Branch and Oldhouse Branch will eliminate the freshwater dilution contributions from both of these tributaries. Based on the current during- and post-mining water quality conditions observed in Seng Camp Creek downstream of the Spruce No. 1 project, selenium values will likely also increase at both outlet points on Oldhouse and Pigeonroost Branch during and post-mining. The increased selenium concentrations combined with the elimination of the dilution from these two tributaries will likely cause the selenium concentrations in Spruce Fork to increase.

In summary, water quality from streams and discharges draining both the Dal-Tex Mine Complex and the current operational portions of the Spruce No. 1 Mine confirm EPA's concern that the Spruce No. 1 project would be likely to discharge levels of selenium exceeding the WV chronic water quality criterion for selenium (greater than 5 µg/l)

downstream of the filled streams and in Spruce Fork.¹⁴ An important adverse impact of selenium residues in aquatic food chains is not just the direct toxicity to the organisms themselves, but rather the dietary source of selenium these organisms contribute to fish and wildlife species in the upper food web that feed on them.

b. Total Dissolved Solids/Conductivity

To understand the water quality impacts from increased total dissolved solids (TDS) and conductivity, it is helpful to understand the relationship between salinity, TDS, and specific conductivity, and the effect increases in conductivity have on native wildlife. For purposes of this action, when Region III discusses increased conductivity or TDS, we are referring to an increase in salinity in otherwise dilute freshwater, consistent with background levels in central Appalachian streams.

Salinity is the mass of salt in a given mass of water. While many of the elements that comprise mineral salts are essential nutrients, aquatic organisms are adapted to specific ranges of salinity and experience toxic effects from excess salinity.

Salinity reflects the amount of TDS in water. TDS is a measure of the combined content of all inorganic and organic substances contained in a solution in molecular, ionized or micro-granular (colloidal) suspended form and is normally reported in the units mg/l. The majority of TDS in many waters are simply salts.

Salinity is often expressed in terms of specific conductivity (hereafter referred to as conductivity). Conductivity is the ability of a solution to carry an electric current at a specific temperature (normally 25° C) and is normally reported in the units $\mu\text{S}/\text{cm}$ (microsiemens per centimeter). Conductivity and TDS both increase as the concentration of ions in a solution increase and are very strongly correlated. Normally, conductivity is reported by state and federal monitoring agencies because it is an instantaneous measurement that can be collected in situ with a meter, that does not require a laboratory analysis, and that is precise and accurate. "Conductivity" refers to the measurement and resulting data; "salinity" refers to the environmental property that is being measured. Conductivity is an excellent indicator of the total concentration of all ions and is also a good predictor of aquatic life use impairment, especially in the ecoregion

¹⁴ The concentrations of water column selenium observed at the Dal-Tex outlets and Seng Creek are significant in the fact that these concentrations have been associated with elevated fish tissue concentrations that are above the levels that cause teratogenic deformities in larval fish, leave fish with Se concentrations above the threshold for reproductive failure (4 ppm), and place birds at risk of reproductive failure through ingestion of fish with selenium concentrations greater than 7 ppm (Lemley 1997). According to the WVDEP's study on 'Selenium Bioaccumulation among select stream and lake fishes in West Virginia' (WVDEP 2009), Seng Camp had the highest average water column concentration (27.20 ppb) and a corresponding average fish tissue concentration of 8.16 ppm. While Beech Creek had a water concentration of 12.30 ppb with a corresponding average fish tissue concentration of 7.55 ppm. As outlined in the graphical trends of selenium concentrations from the DMR records for three permitted outlets for the Dal-Tex Mine Complex (WV1011120, WV1004956, WV1004956), these values are similar or greater than the Seng Camp and Beech Creek concentrations which supports our view that the corresponding fish tissue concentrations will be elevated to levels that cause fish and bird impairments.

69 in which the Spruce No. 1 project is located.

A recent study found that elevated conductivity greater than 500 $\mu\text{S}/\text{cm}$ caused by alkaline mine effluents was strongly associated with high probability of degradation of native biota (Pond et al. 2008). In that study, 20 of 20 mined sites (100%) with conductivity levels greater than 500 $\mu\text{S}/\text{cm}$ reflected adverse impact to native macroinvertebrates using a genus-level multi-metric index, and 17 of those 20 sites (85%) reflected adverse impact to native macroinvertebrates using the family-level WVSCI index (using the less than 68 threshold).¹⁵

WVDEP ambient monitoring data confirm the high probability of adverse impact to aquatic life when conductivity levels are elevated to greater than 500 $\mu\text{S}/\text{cm}$. WVDEP macroinvertebrate data from subcoregion 69d (the Cumberland Mountains of the Central Appalachians, the specific subcoregion where the project is located) were analyzed to determine the percentage of WVDEP sites that reflected adverse impact to aquatic life when the instream conductivity levels exceeded 500 $\mu\text{S}/\text{cm}$. This analysis indicates that a majority of the sites reflected adverse impact to aquatic life when conductivity levels were elevated above 500 $\mu\text{S}/\text{cm}$, even when accounting for the possible confounding effects of acidic pH and habitat degradation. For example, after removing low pH sites, only 100 sites out of 417 sites attained WVSCI scores greater than 68 when conductivity levels were greater than 500 $\mu\text{S}/\text{cm}$ (76% of the sites reflected WVSCI scores less than 68). When the potential confounding effect of habitat degradation was completely removed (this subset includes only sites with Rapid Bioassessment Protocol habitat scores greater than 140, indicating reference quality habitat), 62% of the sites still had WVSCI scores less than 68. See Appendix 1 and 2 for further detail on macroinvertebrates and conductivity.

EPA's draft report, *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* (USEPA 2010a), also recognizes stream aquatic life impacts associated with conductivity. This study, which is publicly available and is undergoing external peer review by the EPA's Science Advisory Board, applies EPA's standard methodology for deriving water quality criteria to field data and concludes that genus-level macroinvertebrate impacts to the biological community occur at conductivity levels as low as 300 $\mu\text{S}/\text{cm}$.

Pond et al. 2008 showed that mayfly richness is significantly reduced to a few or zero genera, and that several stonefly and caddisfly taxa were also extirpated or reduced in abundance, when conductivity exceeds 500 $\mu\text{S}/\text{cm}$ downstream of mining operations similar to Spruce No. 1. This mining-induced pattern was also documented in the eastern Kentucky coalfields (Pond 2010). Many mayfly, stonefly and caddisfly genera are extirpated from streams downstream of headwater valley fills, and this extirpation is strongly correlated to water quality degradation caused by mining. This extirpation is in

¹⁵ As noted elsewhere, in its 2008 Section 303(d) List, WVDEP identified a WVSCI score of 68 as the lowest score at which a waterbody was considered to "fully support" aquatic life. Less than 68 indicates degradation of the aquatic life use.

addition to direct burial of these macroinvertebrates and other wildlife, as previously described. See Appendix 1 macroinvertebrates for further detail.

After evaluating confounding effects as described above, scientific evidence points to the conclusion that the extirpation of macroinvertebrate taxa documented in these studies is caused by water quality degradation and not habitat degradation. Conductivity is an excellent predictor of native taxa loss from Appalachian streams while habitat variables provide little ability to predict taxa loss. Using the WV spring null model applied to genus-level data from Pond et al. (2008), Observed/Expected (O/E) scores strongly responded negatively ($R^2=0.63$) to increasing conductivity. See Section V.B.2.a.ii. below for a further explanation of the Observed/Expected Index. Water quality degradation caused by elevated conductivity explained more than twice the variance in O/E scores than did RBP habitat scores ($R^2=0.28$), confirming that conductivity is an excellent predictor of native taxa loss from Appalachian streams. Sediment deposition, substrate embeddedness, channel alteration, riparian zone width, pH, or temperature had no significant influence on O/E scores. From this analysis it is apparent that habitat degradation offered little explanatory value in O/E variation in this dataset.¹⁶

Data from WVDEP indicate that average conductivity values for Pigeonroost Branch and Oldhouse Branch are very low and are consistent with dilute background conditions in central Appalachian headwater streams (Table 5). Construction of valley fills and other discharges from the Spruce No. 1 Mine into Pigeonroost Branch and Oldhouse Branch would likely cause an increase in conductivity and TDS in receiving waters. This will have two effects: first, it will eliminate Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution to downstream waters, including Spruce Fork; and second, it will transform Pigeonroost Branch and Oldhouse Branch into sources of increased conductivity and TDS to downstream waters.

Construction of valley fills in the ecoregion in which the Spruce No. 1 Mine is located is strongly correlated with an increase in conductivity levels in downstream waters. Sedimentation ponds, which are the usual form of water treatment for surface coal mines, appear to be ineffective in removing TDS and decreasing conductivity. For example, average conductivity and sulfate levels are highly elevated in other tributaries to Spruce Fork where historical mining has occurred. Table 5 provides the following average conductivity and sulfate values for streams draining mined areas to the west of Spruce Fork in comparison with Pigeonroost Branch and Oldhouse Branch.

¹⁶ Sites downstream of MTM in Pond et al. 2008 were located in relatively natural stream reaches in order to help control for obvious habitat effects

Table 5. Average conductivity and sulfate values for streams in project area		
Stream	Conductivity Values	Sulfate Values
Rockhouse Creek	1012 uS/cm conductivity	407 mg/l sulfate
Left Fork of Beech Creek	2426 uS/cm conductivity	1019 mg/l sulfate
Beech Creek	1432 uS/cm conductivity	557 mg/l sulfate
Trace Branch	971 uS/cm conductivity	569 mg/l sulfate
Oldhouse Branch	90 uS/cm conductivity	28 mg/l sulfate
Pigeonroost Branch	199 uS/cm conductivity	99 mg/l sulfate

Average conductivity and sulfate concentrations in the mainstem of Spruce Fork to which Pigeonroost Branch and Oldhouse Branch flow are also strongly elevated to as much as ten times above natural background levels in Oldhouse Branch. Average conductivity at almost every monitoring site on the mainstem Spruce Fork exceeded 500 $\mu\text{S}/\text{cm}$. Only one site had an average conductivity of less than 500 $\mu\text{S}/\text{cm}$, which was located upstream of the project area, upstream of Adkins Fork, and southeast of Blair, WV.

Pigeonroost Branch and Oldhouse Branch are providing freshwater dilution to Spruce Fork thereby preventing conductivity levels in Spruce Fork from becoming even more elevated. Construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would remove sources of freshwater dilution to Spruce Fork and contribute to existing water quality degradation.

In addition to removing Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution for Spruce Fork, construction of valley fills and other discharges authorized by the permit into those waters also would likely transform Pigeonroost Branch and Oldhouse Branch into sources of elevated conductivity and TDS to downstream waters. As described in Section V.B.2.a. below, there is a strong correlation between elevated levels of conductivity and extirpation of macroinvertebrate taxa. Spruce Fork mainstem has little, if any, remaining assimilative capacity for conductivity.

Post-mining conductivity levels in Spruce Fork downstream of the project area were modeled using a watershed area weighted deterministic model with two post-mining average (500 and 1000 $\mu\text{S}/\text{cm}$) and maximum (1000 and 1500 $\mu\text{S}/\text{cm}$) conductivity values for Oldhouse Branch, Pigeonroost Branch and Seng Camp Creek. These values are conservative and likely underestimate the post-mining conductivity values. For example, when compared to Left Fork Beech Creek, which is completely mined and filled, the average and maximum conductivity values are 2425 and 3000 $\mu\text{S}/\text{cm}$. In Beech Creek, which is partially mined and filled, the average and maximum conductivity values are 1432 and 1776 $\mu\text{S}/\text{cm}$ (average and maximum values based on 2002-2003 WVDEP data). In every case, since the measured average and maximum conductivity levels in Spruce Fork are currently greater than 500 $\mu\text{S}/\text{cm}$ pre-mining, the modeled post-mining conductivity values are also greater than 500 $\mu\text{S}/\text{cm}$. Using the more conservative post-mining values (average 500 and 1000 $\mu\text{S}/\text{cm}$ and maximum 1000 and

1500 $\mu\text{S}/\text{cm}$), we estimate that average conductivity in Spruce Fork downstream of Seng Camp Branch could increase from 555 pre-mining to 745 $\mu\text{S}/\text{cm}$ post-mining and maximum conductivity could increase from 965 pre-mining to 1226 $\mu\text{S}/\text{cm}$ post-mining. EPA expects that these additional conductivity increases would likely further extirpate native aquatic macroinvertebrates (wildlife) that are not tolerant to increased conductivity. See Appendix 2 for further detail on conductivity.

2. Impacts to Wildlife

a. Macroinvertebrates

As set forth in Sections IV A.1 and I.B.1 above, benthic macroinvertebrates are diverse and healthy in the Spruce No. 1 project area and represent an important component of the aquatic community in Pigeonroost Branch and Oldhouse Branch. Furthermore, because of their productivity and secondary position in the aquatic food chain, they also play a critical role in the delivery of energy and nutrients to downstream reaches (in aquatic life stages) as well as to upland terrestrial habitats (in winged adult life stages).

Construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch will impact the native macroinvertebrate community in two ways. First, the macroinvertebrates that live in stream channels within the footprint of the valley fill will be destroyed. As set forth in Section V.C. below, it is not likely that the on-site stream creation proposed by the permittee as mitigation would support the quality of macroinvertebrate community that currently exists in Pigeonroost Branch and Oldhouse Branch. Second, construction of valley fills and other authorized discharges into Pigeonroost Branch and Oldhouse Branch would likely have an adverse impact on the macroinvertebrate communities in remaining downstream waters. Sensitive species of mayflies, stoneflies, and caddisflies currently inhabiting downstream waters will be impacted through increasing chemical loading of contaminants.

As set forth above, the 2006 Spruce No. 1 EIS states that impacts from the Spruce No. 1 Mine are expected to be similar to those from the Dal-Tex operation. Accordingly, conditions in streams impacted by the Dal-Tex operation will likely occur in the unfilled portions of the streams that will be impacted by the Spruce No. 1 Mine. To evaluate the impacts from the Spruce No. 1 Mine, Region III analyzed conditions in streams impacted by the Dal-Tex operation. Region III conducted three different analyses. First, Region III compared benthic macroinvertebrate collections from Pigeonroost Branch and Oldhouse Branch to benthic macroinvertebrate samples from streams that have been impacted by Mingo Logan's Dal-Tex operation. Second, Region III used an observed/expected approach. Third, Region III compared WVSCI scores in Pigeonroost Branch and Oldhouse Branch with streams impacted by the Dal-Tex operation. The following describes these three analyses.

i. Comparison of macroinvertebrate communities

To evaluate the impact of the project, EPA compared benthic collections from the Spruce No. 1 project area to Mingo Logan's Dal-Tex site (Table 1), using an equal number of

benthic samples collected at both locations. This analysis reveals that construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would likely result in degraded macroinvertebrate communities downstream of these discharges.

Considering the number of genera collected, the relatively unimpacted Pigeonroost Branch and Oldhouse Branch contain a far greater number and diversity of macroinvertebrate genera. Collectively, 85 different genera were collected from Pigeonroost Branch and Oldhouse Branch between 1999-2000, while only 56 different genera were collected from both Beech Fork and Left Fork Beech Fork, streams that drain the inactive Dal-Tex operations.

Region III further refined its analysis to a comparison of the Ephemeroptera, Plecoptera and Trichoptera (EPT: mayflies, stoneflies and caddisflies) taxa collected. In Pigeonroost and Oldhouse combined, 42 EPT taxa were collected, while at Dal-Tex (Beech and Left Fork Beech), only 12 EPT were found. Narrowing further to mayflies and stoneflies, there were 14 mayfly genera and 12 stonefly genera in Oldhouse Branch and Pigeonroost Branch but only two relatively pollution-tolerant mayfly genera and three pollution-tolerant stonefly genera were collected in streams draining the Dal-Tex mine.. EPA also found that caddisflies were rich (14 total genera) in Pigeonroost and Oldhouse, but only seven total genera were found in Beech and Left Fork Beech downstream of the Dal-Tex mine.

As set forth above in Section IV.A., macroinvertebrates are good indicators of watershed health, and differ in their tolerance to the amount and types of pollution. Macroinvertebrate communities integrate the effects of stressors over time and some taxa (i.e., taxonomic category or group such as phylum, class, family, genus, or species) are considered pollution-tolerant and will survive in degraded conditions. Some taxa are pollutant-intolerant and will die when exposed to certain levels of pollution. Thus, the composition of tolerant and intolerant (i.e., sensitive) communities informs scientists about the quality of the water. The presence of a large number of individuals from the more sensitive genera indicates good water quality conditions, whereas the presence of a large number of tolerant genera may indicate degraded conditions.

The data described above indicates a substantial reduction in taxa diversity in the mine-impacted waters. In addition, several tolerant taxa were found in the streams draining the Dal-Tex mine that were not found in the Spruce project area further indicating degradation and adverse impact to wildlife habitat (Table 1). Some of these taxa are highly tolerant snails that typically do not occupy healthy headwater streams in the Appalachians (*Lymnaeidae*, *Physella*, *Helisoma*). Other tolerant beetles and fly larvae found at Dal-Tex but not Pigeonroost or Oldhouse also indicate biological impacts and altered environmental conditions (i.e., atypical of Appalachian headwater streams) that foster the invasion of these tolerant taxa. Table 6 compares the macroinvertebrate taxa identified in Oldhouse Branch and Pigeonroost Branch with that found in streams that have been impacted by the Dal-Tex Mine.

Table 6. List of macroinvertebrate taxa identified from Spruce project and Dal-Tex.

Order	Family	Genus	Oldhouse +Pigeonroost	Beech+Left Fork Beech
			Spruce No. 1	Dal-Tex Mine
Oligochaeta	Oligochaeta	Oligochaeta	X	X
Nematoda	Nematoda	Nematoda		X
Proseriataoela	Plagiosomidae	<i>Hydrolimax</i>	X	
Tricladida	Planariidae	Planariidae	X	
Basommatophora	Lymnaeidae	Lymnaeidae		X
Basommatophora	Physidae	<i>Physella</i>		X
Basommatophora	Planorbidae	<i>Helisoma</i>		X
Coleoptera	Dryopidae	<i>Helichus</i>	X	
Coleoptera	Elmidae	<i>Dubiraphia</i>		X
Coleoptera	Elmidae	<i>Macronychus</i>		X
Coleoptera	Elmidae	<i>Microcylloepus</i>		X
Coleoptera	Elmidae	<i>Optioservus</i>	X	X
Coleoptera	Elmidae	<i>Oulimnius</i>	X	X
Coleoptera	Psephenidae	<i>Ectopria</i>	X	
Coleoptera	Psephenidae	<i>Psephenus</i>	X	X
Decapoda	Cambaridae	<i>Cambarus</i>	X	
Diptera	Ceratopogonidae	<i>Atrichopogon</i>		X
Diptera	Ceratopogonidae	<i>Bezzia/Palpomyia</i>	X	X
Diptera	Ceratopogonidae	<i>Dasyhelea</i>	X	X
Diptera	Chironomidae	<i>Acricotopus</i>		X
Diptera	Chironomidae	<i>Chaetocladius</i>	X	X
Diptera	Chironomidae	<i>Corynoneura</i>	X	X
Diptera	Chironomidae	<i>Cricotopus</i>	X	X
Diptera	Chironomidae	<i>Diamesa</i>	X	X
Diptera	Chironomidae	<i>Eukiefferiella</i>	X	X
Diptera	Chironomidae	<i>Metriocnemus</i>		X
Diptera	Chironomidae	<i>Micropsectra</i>	X	X
Diptera	Chironomidae	<i>Microtendipes</i>	X	
Diptera	Chironomidae	<i>Orthocladius</i>	X	X
Diptera	Chironomidae	<i>Parachaetocladius</i>	X	
Diptera	Chironomidae	<i>Parametriocnemus</i>	X	X
Diptera	Chironomidae	<i>Paraphaenocladius</i>		X
Diptera	Chironomidae	<i>Paratanytarsus</i>		X
Diptera	Chironomidae	<i>Polypedilum</i>	X	X
Diptera	Chironomidae	<i>Rheotanytarsus</i>	X	X
Diptera	Chironomidae	<i>Smittia</i>		X
Diptera	Chironomidae	<i>Stempellinella</i>	X	
Diptera	Chironomidae	<i>Stenochironomus</i>		X
Diptera	Chironomidae	<i>Stilocladius</i>	X	
Diptera	Chironomidae	<i>Sympotthastia</i>	X	
Diptera	Chironomidae	<i>Tanytarsus</i>	X	
Diptera	Chironomidae	<i>Thienemanniella</i>		X
Diptera	Chironomidae	<i>Thienemannimyia</i>	X	X
Diptera	Chironomidae	<i>Tvetenia</i>	X	X
Diptera	Chironomidae	<i>Zavrelimyia</i>	X	
Diptera	Empididae	<i>Chelifera/Metachela</i>	X	X
Diptera	Empididae	<i>Clinocera</i>	X	
Diptera	Empididae	<i>Hemerodromia</i>		X
Diptera	Simuliidae	<i>Prosimulium</i>	X	
Diptera	Simuliidae	<i>Simulium</i>	X	X
Diptera	Tabanidae	Tabanidae		X
Diptera	Tipulidae	<i>Antocha</i>		X
Diptera	Tipulidae	<i>Cryptolabis</i>	X	
Diptera	Tipulidae	<i>Dicranota</i>	X	
Diptera	Tipulidae	<i>Hexatoma</i>	X	

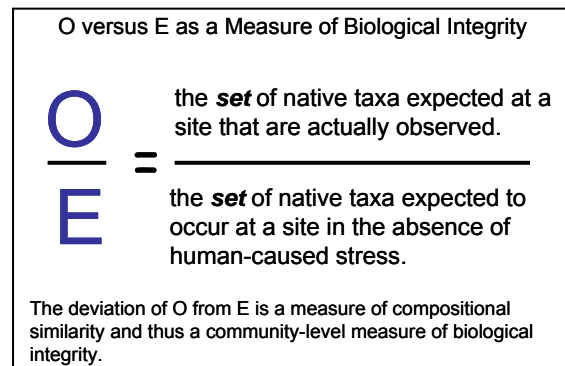
Table 6. Continued.

Continued			Oldhouse +Pigeonroost	Beech+Left Fork Beech
Order	Family	Genus	Spruce No. 1	Dal-Tex Mine
Diptera	Tipulidae	<i>Limnophila</i>	X	
Diptera	Tipulidae	<i>Limonia</i>	X	X
Diptera	Tipulidae	<i>Pseudolimnophila</i>	X	
Diptera	Tipulidae	<i>Tipula</i>	X	X
Ephemeroptera	Ameletidae	<i>Ameletus</i>	X	
Ephemeroptera	Baetidae	<i>Acentrella</i>	X	
Ephemeroptera	Baetidae	<i>Baetis</i>	X	X
Ephemeroptera	Baetiscidae	<i>Baetisca</i>	X	
Ephemeroptera	Ephemerellidae	<i>Drunella</i>	X	
Ephemeroptera	Ephemerellidae	<i>Ephemerella</i>	X	
Ephemeroptera	Ephemerellidae	<i>Eurylophella</i>	X	
Ephemeroptera	Ephemeridae	<i>Ephemer</i>	X	
Ephemeroptera	Heptageniidae	<i>Cinygmula</i>	X	
Ephemeroptera	Heptageniidae	<i>Epeorus</i>	X	
Ephemeroptera	Heptageniidae	<i>Stenacron</i>	X	
Ephemeroptera	Heptageniidae	<i>Maccaffertium/Stenonema</i>	X	
Ephemeroptera	Isonychiidae	<i>Isonychia</i>	X	X
Ephemeroptera	Leptophlebiidae	<i>Paraleptophlebia</i>	X	
Megaloptera	Corydalidae	<i>Corydalus</i>		X
Megaloptera	Corydalidae	<i>Nigronia</i>	X	X
Odonata	Aeshnidae	<i>Boyeria</i>		X
Odonata	Gomphidae	<i>Lanthus</i>	X	X
Plecoptera	Capniidae	Capniidae	X	
Plecoptera	Chloroperlidae	<i>Haploperla</i>	X	
Plecoptera	Leuctridae	<i>Leuctra</i>	X	
Plecoptera	Nemouridae	<i>Amphinemura</i>	X	X
Plecoptera	Nemouridae	<i>Ostrocerca</i>	X	
Plecoptera	Nemouridae	<i>Prostoia</i>		X
Plecoptera	Peltoperlidae	<i>Peltoperla</i>	X	
Plecoptera	Perlidae	<i>Acroneuria</i>	X	
Plecoptera	Perlodidae	<i>Isoperla</i>	X	
Plecoptera	Perlodidae	<i>Remenus</i>	X	
Plecoptera	Perlodidae	<i>Yugus</i>	X	
Plecoptera	Pteronarcyidae	<i>Pteronarcys</i>	X	
Plecoptera	Taeniopterygidae	<i>Taenionema</i>	X	
Plecoptera	Taeniopterygidae	<i>Taeniopteryx</i>	X	X
Trichoptera	Glossosomatidae	<i>Agapetus</i>	X	
Trichoptera	Glossosomatidae	<i>Glossosoma</i>	X	
Trichoptera	Goeridae	<i>Goera</i>	X	
Trichoptera	Hydropsychidae	<i>Ceratopsyche</i>	X	
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i>	X	X
Trichoptera	Hydropsychidae	<i>Diplectrona</i>	X	X
Trichoptera	Hydropsychidae	<i>Hydropsyche</i>	X	X
Trichoptera	Hydroptilidae	<i>Hydroptila</i>		X
Trichoptera	Limnephilidae	<i>Pycnopsyche/Hydatophylax</i>	X	
Trichoptera	Philopotamidae	<i>Chimarra</i>	X	X
Trichoptera	Philopotamidae	<i>Dolophilodes</i>	X	
Trichoptera	Polycentropodidae	<i>Polycentropus</i>	X	
Trichoptera	Psychomyiidae	<i>Psychomyia</i>	X	X
Trichoptera	Rhyacophilidae	<i>Rhyacophila</i>	X	X
Trichoptera	Uenoidae	<i>Neophylax</i>	X	
Tricladida	Planariidae	Planariidae	X	
Total Distinct Taxa			85	56
Total EPT Taxa			42	12

ii. Observed/Expected Index

In order to further predict and quantify the loss of taxa expected from construction of valley fills in Pigeonroost Branch and Oldhouse Branch as authorized, Region III applied a well-accepted and peer reviewed approach, called an Observed/Expected index (O/E) (Hawkins 2006, Van Sickle 2005) (Figure 13). O/E ratios basically represent the proportion of predicted taxa that were observed in a sample, compared to those expected in the sample, after predicting the probability that a sample site is a member of one or more fixed sets of reference site types.

Figure 13. Measure of biological integrity; O vs. E (C.P. Hawkins, Utah State Univ.).



Rather than using several reference site types, null models can be developed that assume only one set of comparable reference sites. Null models are appropriate when working in areas with relatively similar physical and regional characteristics that may have influence on the macroinvertebrate community (e.g., geology, stream slope, natural substrate, season and climate), as is the case in this application. For the WV null models, EPA first calculated the probability of capture (Pc) as the proportion of a taxon's occurrence in spring and summer at all mountain reference sites (combined ecoregions 67, Ridge and Valley, and ecoregion 69, Central Appalachians). For example, the stonefly *Leuctra* was present at 94% of mountain reference sites in spring, so its Pc value for spring is 0.94. EPA conducted this probability calculation for all non-chironomid taxa. The Pc's of all taxa with a Pc greater than 0.1 were then summed to yield the *Expected* number of taxa at a site for the given season (Table 7). Therefore, the *Expected* total number of taxa at a mountain site in spring is 20.4 and in summer is 18.7.

A site that is a perfect match to the richness of expected indigenous taxa will score 1.0, while downward deviation from 1.0 indicates increasing loss of expected taxa compared to regional reference (e.g., a score of 0.50 indicates a 50% loss of the expected taxa). Upward deviation (greater than 1.0) simply indicates that more taxa were collected than expected. (When a taxon is observed at a test site, that taxon is counted as 1 for the observed score, so if the Pc is less than 1 for that taxon, this can lead to O/E scores

greater than 1. For example, for the stonefly *Leuctra*, the Pc of capture is 0.94, so its tally for E is only 0.94, but if the taxa is observed at a site, its tally for O is 1.

We chose the 5th percentile of reference site O/E scores as a threshold to correspond to WVDEP's bioassessment threshold for assessing aquatic life support. This O/E 5th percentile was 0.64, indicating a loss of 36% of expected taxa.

The WV null model indicates that macroinvertebrate assemblages in Pigeonroost Branch, Oldhouse Branch and the upstream White Oak Branch are comparable to WVDEP mountain ecoregion reference sites and that there is adverse impact (O/E less than 0.64) to streams receiving drainage from MTM/VF operations in WV, including streams adjacent to the Spruce mine area (Tables 3 and 4). The highest O/E scores (1.18) were in Pigeonroost, Oldhouse and White Oak Branches. The lowest O/E scores (0.20) were in Beech and Left Fork of Beech Creek, both of which have been impacted by mining operations.

The model indicates that macroinvertebrate assemblages in Pigeonroost Branch and Oldhouse Branch are comparable to WVDEP mountain ecoregion reference sites. In contrast, past mining by Mingo Logan has led to the estimated extirpation of ~70% of the native expected taxa in their adjacent Dal-Tex mine operation (Table 7). It is highly likely that conditions in the unfilled portions of Pigeonroost Branch and Oldhouse Branch will follow this pattern of genus-level extirpation if valley fills are constructed in those waters as currently authorized. See Appendix 1 for more details on O/E. and model development.

Table 7. Summary of WV O/E null model results for the Spruce No. 1 Project area. The biological impairment threshold is 0.64 (corresponding to the 5th percentile of WVDEP reference site distributions). An O/E score of ~1.0 means that the number of Observed native taxa is equivalent to the Expected number of native taxa. SD = standard deviation.

Table 7			
		Mean (SD) O/E	
	Spruce No. 1	Dal-Tex	
	Pigeonroost, Oldhouse, White Oak	Beech, LF Beech	Rockhouse
Spring	0.98 (0.20); n=9	0.26 (0.06); n=5	0.31 (0.10); n=3
Summer	0.85 (0.15); n=2	0.32 (0.08); n=2	0.38 (0.08); n=2
<ul style="list-style-type: none"> • Adjacent mined sites include LF Beech, Beech, and Rockhouse • The highest O/E scores were recorded in Pigeonroost, Oldhouse, and White Oak (each scored 1.18) • The lowest O/E scores were recorded in Beech and LF Beech on Dal-Tex (each scored 0.20) 			
Based on WVDEP Mountain reference sites, on average:			
<ul style="list-style-type: none"> • Spruce No. 1 samples are missing ~2% of expected taxa in Spring, and ~15% in Summer • Dal-Tex sites are missing ~74% of expected taxa in Spring, and ~68% in Summer.¹⁷ • SD for Spruce No. 1 streams had similar or better precision (SD) to the WVDEP reference model • SD for Dal-Tex was very low indicating that all observations consistently show missing taxa 			

iii. Comparison of WVSCI scores

States routinely use macroinvertebrate assemblage data to assess compliance with their narrative water quality standards and to determine support of aquatic life. For the past several cycles of Section 303(d) lists of impaired waters, WVDEP has used a family-level multi metric index called the WV Stream Condition Index or WVSCI. The WVSCI uses six (6) component metrics to summarize and analyze family-level macroinvertebrate taxa lists. The six metrics are total number of EPT (Ephemeroptera, Plecoptera and Trichoptera or mayflies, stoneflies and caddisflies) taxa, total number of taxa, percent of organisms that are EPT, percent of organisms that are Chironomidae (midges), the percent of organisms in the top two dominant taxa, and the Hilsenhoff Biotic Index. All metrics are computed at the family-level with a 200 fixed count subsample. The metrics are scored against Best Standard Values (BSVs) for the entire dataset, as a percent of the BSV and normalized to a score of 100. The average of all six metrics makes up the final WVSCI score. Simply put, the lower the score, the more degraded the macroinvertebrate assemblage. For more information on the WVSCI, go to http://www.wvdep.org/Docs/536_WV-Index.pdf.

¹⁷ Based on EPA data (Pond et al. 2008), all mined sites lost 47% of expected taxa, on average.

Examination of the West Virginia dataset has shown that the family-level metrics used by WVDEP generally underestimate degradation of the macroinvertebrate community impairment of aquatic life uses as compared to more sensitive genus-level indices due to the coarse level of taxonomy. Despite this lower sensitivity, bioassessments using WVSCI have documented adverse impacts to aquatic life due to mining in streams on mined sites near the project area

EPA sampled several streams within the Spruce Fork watershed for the Mountaintop Mining/Valley Fill Programmatic Environmental Impact Study (PEIS) (Green et al. 2000; Bryant et al. 2002). These assessments indicate that the unmined streams within and near the project area, including White Oak Branch, Oldhouse Branch and Pigeonroost Branch were high quality streams that fully support the aquatic life use, based on the family-level WVSCI and water quality data (see Appendix 1 and 2). The streams located in the historically MTM/VF mined areas located nearby (Rockhouse Branch, Beech Creek, and the Left Fork of Beech Creek) had WVSCI scores that would indicate they did not fully support aquatic life. These EPA data indicate that the aquatic life in streams on the project area (i.e., Oldhouse Branch and Pigeonroost Branch) would be likely degraded to the conditions exhibited in the Beech Creek and Rockhouse sub-watersheds after they are mined.

WVDEP data and assessments confirm that the aquatic life is adversely impacted not only in the nearby mined streams, but further downstream, on the mainstem of Spruce Fork, Pond Fork and the Little Coal River (see Appendix 1). The adverse impacts in the mainstem of Spruce Fork, Pond Fork, and the Little Coal are likely due to a combination of stressors, including mining and residential stressors. (WVDEP 1997).

Construction of valley fills, sediment ponds, and other discharges into Pigeonroost Branch and Oldhouse Branch as authorized by the DA Permit No. would be likely to export additional contaminants (conductivity) to Spruce Fork. Due to the sensitivity of native macroinvertebrate wildlife to elevated and increasing levels of conductivity, these contaminants are likely to hinder the maintenance or recovery of these biological communities.

b. Salamanders

As stated above, the ecoregion where the Spruce No. 1 project is located has one of the richest salamander fauna in the world. Impacts from the activities authorized as part of the project will have a significant adverse impact on this wildlife group located within the project area. Based on literature values (Williams 2002) for mean densities within reference reaches of Pigeonroost Branch, Bend Branch (another tributary of Spruce Fork), and Ash Fork (a tributary of Gauley River) and a 2004 USFWS study in White Oak Branch, EPA estimates aquatic salamander density in Pigeonroost Branch and Oldhouse Branch at ~5-6 per square meter along stream channels. Approximately seven acres of stream channel would be filled in Pigeonroost Branch and Oldhouse Branch by the project as currently authorized which means that more than 200,000 stream-dwelling

salamanders would be buried by the currently authorized valley fills. It is not expected that stream salamanders will return to the site due to the burial of their existing habitat and the inadequacy of proposed mitigation to replace the habitat required by these wildlife. Gingerich (2009) found no expected stream salamanders inhabiting 3-20 yrs old sediment ditches (5 out of 5 mines) on West Virginia MTM areas. Furthermore the USFWS has indicated that, to its knowledge, it has not been demonstrated that salamanders return to surface-mined areas and achieve densities similar to those that occurred prior to mining.

Since salamanders represent the main vertebrate predator in these headwater streams, and will be eradicated under the project, EPA believes that a key component of the aquatic food web would be likely to be lost from the aquatic ecosystem within Pigeonroost Branch and Oldhouse Branch portions of the Spruce No. 1 mine area.

According to the USFWS, adverse impacts to salamanders as a result of construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch will not be localized to the area to be filled. Because construction of the valley fills and other discharges are very likely to increase conductivity and selenium levels in the downstream receiving waters (See Section V.B.1 above), salamanders that are not directly buried and killed beneath the fills are also likely to be impacted; directly via exposure to these contaminants and perhaps indirectly via impacts of contaminants on food sources. (Patnode, et al. 2005) Such impacts are likely to occur as far downstream as elevated conductivity, selenium or other contaminants persist, and to affect any salamanders that spend some part of their life in the aquatic environment or in immediately adjacent riparian terrestrial habitats. These impacts would likely be exacerbated by the loss of fresh water dilution from Pigeonroost and Old House Branch.

USFWS also indicated that while range-wide populations of common species may not be significantly impacted, the salamander communities in individual headwater systems behave essentially as isolated populations because there is limited interaction (immigration and emigration) with communities in adjacent watersheds (Dr. Thomas Pauley, Marshall University and personal communication with Jim Zelenak USFWS WV Field Office). Therefore, the populations within the watersheds that will be impacted by fill (the footprints of the valley fills and the downstream toxicity in the form of elevated conductivity, selenium, and potentially other contaminants), and are very likely to be significantly impacted.

Furthermore, as set forth in Section V.B.2.c.i. below, construction of valley fills and other discharges into Pigeonroost Branch and Oldhouse Branch has the potential to contribute to conditions that would support blooms of golden algae (*Prymnesium parvum*), which can produce a toxin that is highly toxic to aquatic life and was associated with an extensive aquatic life kill of both fish and lungless salamanders in Dunkard Creek in West Virginia in September 2009.

c. Fish

As described in Section IV.B.3. above, the fish assemblages in Pigeonroost Branch and Oldhouse Branch are typical of headwater streams, containing only a few species. The fish assemblages in Spruce Fork are in relatively good condition. While some studies have documented adverse impacts to fish communities associated with surface coal mining, based on the fish community in Spruce Fork downstream of the Dal-Tex operation, it appears that the fish within Spruce Fork are fairly tolerant of increases in conductivity and total dissolved solids. Nevertheless, increases in conductivity and total dissolved solids and construction of sediment ponds associated with valley fills authorized in Pigeonroost Branch and Oldhouse Branch will create conditions considered favorable to the growth of golden algae (*Prymnesium parvum*), which has caused large aquatic life kills. Fish also would be likely to be exposed to increases in selenium concentrations, which could lead to bioaccumulation in fish tissues and to reproductive effects (see Section V.B.1.a. above). Because of the potential to promote the growth of golden algae and because of the likely increased exposure to selenium, Region III concludes that construction of valley fills in Pigeonroost Branch and Oldhouse Branch would be likely to have an adverse effect on the fish population in those waters and in Spruce Fork.

i. Potential to promote growth of golden algae

Construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch as currently authorized are likely to contribute to instream conditions in or near Spruce Fork that may support the growth of golden algae (*Prymnesium parvum*), which releases toxins that kill fish and other gill-breathing aquatic organisms. *P. parvum* is a haptophyte (flagellated) algae now distributed worldwide. This algae has been known to North America since the 1980's (Baker et al., 2007) and has since become established in many Texas and Oklahoma rivers and reservoirs. *P. parvum* is responsible for Harmful Algal Blooms (HAB's) that have killed millions of fish in Texas and Oklahoma, and has been implicated in kills from North Carolina to Arizona.

P. parvum has also been associated with an extensive and severe aquatic life kill, which destroyed thousands of fish, mussels and other aquatic life in Dunkard Creek, West Virginia and Pennsylvania in September 2009. At the time of the Dunkard Creek aquatic life kill, biologists reported observations of thousands of dead fish, mussels and salamanders. Mud puppies (an aquatic salamander that lives its entire life underwater) crawled out of the water and onto rocks and the shoreline in an attempt to escape from the toxic water. Field biologists observed numerous individuals as dried up carcasses on rocks and along the shoreline. Fish were observed avoiding the mainstem of Dunkard Creek by practically "stacking -up" in the mouths of tributaries, subjecting themselves to feeding by blue heron rather than remaining in the toxic water of mainstem Dunkard Creek. The identification of *P. parvum* in 2009 in Dunkard Creek was the first identification of this invasive aquatic species in the Mid-Atlantic States.

The factors that are most closely associated with supporting growth of *P. parvum* are believed to be:

1. Proximity to a known source of *Prymnesium parvum*.
2. TDS in high enough amounts to support *P. parvum* (estimated to be between 500 and 1000 mg/L (conductivity 714-1428 $\mu\text{S}/\text{cm}$).
3. Nutrients of great enough amount to initiate a bloom of *P. parvum*
4. pH greater than 6.5. Risk increases with increasing pH.

Areas of habitat that are pooled (large beaver dams, natural residual pools, or manmade ponds)

EPA believes that the Spruce No. 1 project is likely to increase the likelihood that all five factors are met within the Spruce Fork sub-watershed, as outlined below.

1) Proximity to Known Source: *P. parvum* was identified (in very high numbers) in Cabin Creek of the Kanawha drainage, only 25 miles over the ridge to the East. Because this algae can easily move with waterfowl, the risk of introducing *P. parvum* in the Spruce Fork drainage is high.

Although not currently found in Spruce Fork, WVDEP has identified Spruce Fork as a “water of concern” because of its potential (due to already high levels of TDS/conductivity) to support *P. parvum* blooms consistent with the factors shown above.

2) High TDS: The lower TDS limits for the growth of *P. parvum* appears to be ~500 mg/l TDS, or ~700 $\mu\text{S}/\text{cm}$ conductivity for the ion mixtures typical of alkaline mine drainage. Recent data indicate that growth of *P. parvum* increases 2-3 fold when conductivity increases from 500 $\mu\text{S}/\text{cm}$ to 1000 $\mu\text{S}/\text{cm}$ (unpublished data, WVDEP, 2010). The waters draining the nearby Dal-Tex Mine operation have conductivity levels greater than these values. Many of the sampling sites on the mainstem of Spruce Fork, Pond Fork and the Little Coal River also have conductivity levels exceeding these endpoints. Other waters of concern near the Spruce No. 1 project include the Little Coal River and West Fork/Pond Fork

As described in Section V.A, construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch would be likely to increase levels of TDS/conductivity in Spruce Fork, thus creating conditions more favorable to *P. parvum*.

In addition, DA Permit No. 199800436-3 (Section 10: Coal River) authorizes construction of numerous sedimentation ponds in Pigeonroost Branch and Oldhouse Branch. These will create areas of pooled habitat more favorable to *P. parvum*. During low flows, when conductivity is highest, flow is lowest, increasing the possibility that blooms could occur in very slow moving residual pools within the channel.

3) *Suitable Nutrient Levels*: Nutrients in the Spruce Fork are of similar availability to Dunkard Creek and other watersheds with *P. parvum* algae present (e.g. Whitely Creek, PA). Phosphorous in Spruce Fork was over 100 µg/L on two sampling occasions during the PEIS.

4) *High pH*: Discharges from Spruce No. 1 are likely to be alkaline, consistent with pH of discharges from Dal-Tex and other operations, etc. etc.

5) *Existence of Pooled Habitats*: Pooled habitats with little to no flow are common in streams like Spruce Fork in low flow conditions of September and October, when TDS is highest.

ii. Increased exposure to selenium

As set forth in Section V.B.1.a, construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would be likely to result in elevated levels of selenium in receiving waters. While selenium is a naturally occurring chemical element that is an essential micronutrient, excessive amounts of selenium can also have toxic effects on fish. Selenium toxicity is primarily manifested as reproductive impairment and birth defects due to maternal transfer, resulting in embryotoxicity and teratogenicity in egg-laying vertebrates (e.g. fish and ducks). The most sensitive toxicity endpoints in fish larvae are teratogenic deformities such as skeletal, craniofacial, and fin deformities, and various forms of edema. Embryo mortality and severe development abnormalities can result in impaired recruitment of individuals into populations (Chapman et al. 2009). A WV draft study indicates that elevated selenium concentrations in fish eggs, increased larval deformity rates and increased deformity rates in mature fish are occurring in the Mud River Reservoir, Boone County, WV due to mining activities. These adverse conditions were all associated with elevated water column selenium concentrations (WVDEP, 2009, draft).

In summary, construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch would likely result in increased instream levels of selenium that can have toxic effects on fish.

iii. Other potential impacts to fish

A number of studies have documented adverse impacts to fish communities associated with surface coal mining. It is important to consider basin size when assessing the potential effects of valley fills because small streams (less than 10 km²) have shown effects to the fish assemblage while larger streams have not (e.g., Fulk et al. 2003). As noted by Fulk et al. (2003) using fish indices like the Mid-Atlantic Highlands Index of Biotic Integrity (MAHA IBI) of McCormick et al. (2001) is problematic in small streams that are species depauperate (limited diversity) because the index is greatly affected by the addition or subtraction of one or two individuals of a different species. Nevertheless, Fulk et al. did analyze small streams in their report and found significant differences in

total IBI scores between mined and unmined streams. This difference was attributed to changes in cyprinid species richness and the percent of the assemblage composed of benthic invertivores. There was no significant difference in percent cottids (sculpin).

Some studies have shown that mountaintop mining for coal and construction of valley fills has had a harmful effect on the composition of stream fish communities (Fulk et al., 2003, Stauffer and Ferreri, 2002). Comparison of streams without mining in the watershed and sites downstream of valley fills in Kentucky and West Virginia indicate that streams affected by mining had significantly fewer total fish species and fewer benthic fish species than streams without mining in the same areas (Stauffer and Ferreri, 2002).

Fulk et al. (2003) used the Mid-Atlantic Highlands Index of Biotic Integrity (IBI - a multi-metric index used to assess biotic health) to analyze fish data from 27 streams in West Virginia. In their study, Fulk et al. (2003) classified streams (no mining in the watershed, mountaintop mining in the watershed, sites downstream of valley fills, and sites with both mining and residential development in the watershed) and compared fish assemblage health among stream classes. The study showed that assessment scores from the sites downstream of valley fills were significantly lower than scores from sites without mining in the watershed, indicating that fish communities were degraded in sites downstream of valley fills. Sites with residences in addition to mining, however, scored similarly to the unmined sites.

Sites that were sampled in Spruce Fork for the PEIS were classified as “filled with residences.” Sampling data in the Spruce Fork sub-watershed downstream of the Dal-Tex operation scores similarly to filled residential sites in the PEIS. There is no difference between filled residential sites and unmined sites in the PEIS.

In summary, there remains the potential that construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch have the potential to promote the growth of golden algae and increase exposure to selenium. For these reasons, Region III concludes that construction of valley fills and other discharges authorized into Pigeonroost Branch and Oldhouse Branch would be likely to have an adverse effect on the fish population in those waters and in Spruce Fork.

d. Water-dependent birds

Loss of headwater streams from the project would be likely to impact water dependent birds, such as the Louisiana waterthrush, that require forested headwater streams for foraging on insects and nesting by elimination of the headwater areas associated with Pigeonroost Branch and Oldhouse Branch.

The Louisiana waterthrush has been designated by USFWS as a Bird of Conservation Concern (BCC) within the Appalachian Mountains Bird Conservation Region (AMBCR) that may be impacted by Mountaintop Mining – Valley Fills (MTM-VF).

According to USFWS, the Louisiana waterthrush is an area-sensitive riparian-obligate species that nests and forages along headwater streams of intact interior forests; it relies for breeding success on the diverse and productive assemblage of aquatic insects supported by healthy headwater systems (Mattson et al. 2009). Studies indicate that breeding territory density and occupancy were reduced along streams where benthic macroinvertebrate communities had been degraded due to anthropogenic land uses and acidification. Lower breeding territory densities occurred along streams impacted by acid mine drainage more so than along circumneutral streams. Similarly, some indices of benthic macroinvertebrate integrity were higher where breeding Louisiana waterthrushes were present than areas from which they were absent. Stream reaches where breeding birds were detected had a greater proportion of pollution-sensitive benthic macroinvertebrates than reaches where they were not detected supporting the concept that good water quality is a key component of the species breeding habitat.¹⁸ Management for this species has focused on protecting core wooded riparian habitat, including establishment of undisturbed riparian forest cover, and preservation and improvement of water quality to ensure aquatic insect biomass and diversity.

For water-dependent wildlife, like the Louisiana waterthrush, preservation of large tracts of forest containing headwater streams is needed for the conservation of this species in the central Appalachians. The waterthrush is particularly vulnerable to degradation of water quality and aquatic insect communities (Mattsson and Cooper 2006, Mulvihill et al. 2008).

3. Summary

In summary, construction of valley fills, sedimentation ponds, and other discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) to Pigeonroost Branch and Oldhouse Branch would eliminate headwater stream systems that support some of the last remaining least-degraded conditions within the Coal River sub-basin, destroy (through burial) diverse and healthy wildlife communities and habitat within those headwater stream systems. In addition, the discharges would likely convert previously healthy, functioning headwater streams into sources of contaminants to downstream waters that would likely adversely affect wildlife in those downstream waters. These impacts likely will cause significant degradation of the Nation's waters as described in 40 C.F.R. 230.10(c), particularly within the context of the mine-impacted Coal River sub-basin and Spruce Fork sub-watershed. As set forth in Section V.C.

¹⁸ In addition to stream pollution from anthropogenic land uses, elevated predator numbers from landscape-scale forest fragmentation and the loss of riparian forest canopy could also negatively impact future population levels of the Louisiana waterthrush. Ongoing impacts associated with landscape disturbances, including defoliation, increased stream temperatures, and compositional shifts in benthic macroinvertebrate communities, also could reduce populations in the AMBCR. Therefore, measures of Louisiana waterthrush distribution and reproduction may be useful indicators of both stream and forest ecosystem integrity.

below, Region III has determined that the compensatory mitigation plan for this project would be unlikely to compensate adequately for the impacted resources or to reduce the impacts described above to an acceptable level.

C. Mitigation is not likely to offset anticipated impacts

The Section 404(b)(1) Guidelines require that the permit authorize only the least environmentally damaging practicable alternative. 40 C.F.R. 230.10(a). In addition, no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. 40 C.F.R. 230.10(d). Thus, impacts must be first avoided and then minimized. It is only after practicable and appropriate steps have been taken to avoid and minimize impacts that compensatory mitigation to offset unavoidable adverse impacts to aquatic resources authorized by Clean Water Act Section 404 permits and other Department of the Army (DA) permits may be considered.

Analysis by Region III indicates that there appear to be alternative configurations that would avoid much of the discharges to Pigeonroost Branch and Oldhouse Branch. Because the scope of this Recommended Determination is limited to withdrawal of specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material in connection with the Spruce No. 1 Mine, Region III takes no position at this time as to whether the alternatives that Region III has identified would be likely to result in acceptable or unacceptable effects on wildlife or satisfy the Section 404(b)(1) Guidelines.

If constructed as authorized the Spruce No. 1 Mine will result in direct impacts (through discharge of dredged and/or fill material) to approximately 35,368 linear feet (about 6.6 miles) of stream in Pigeonroost Branch and Oldhouse Branch. The impacts from these discharges are discussed in Sections V.A. & V.B. above.

While Region III recognizes that the project includes mitigation efforts (including stream creation and enhancement of existing streams) to compensate for unavoidable adverse impacts, Region III is concerned that known compensatory mitigation techniques would be unlikely to replace the high quality resources in Pigeonroost Branch and Oldhouse Branch. Additionally, Region III believes that the current mitigation plan does not adequately account for the quality and function of the impacted resources.

The Compensatory Mitigation Plan (CMP) submitted by Mingo Logan describes on-site and off-site, in-kind mitigation. On-site compensation would include the restoration of 7,132 linear feet of stream segments temporarily impacted by the sedimentation ponds, and the creation of 43,565 linear feet of on-bench stream channel within the project area. Off-site compensation includes stream enhancements to Spruce Fork and Rockhouse Creek through a combination of physical, aquatic habitat, and stream stabilization improvements. Finally, the CMP proposes to direct surface water flow from the project area in existing drainage ways to promote the development of more defined channels, thus creating 26,625 linear feet of streams.

Both EPA and the USFWS have regularly identified problems with the mitigation techniques that are part of the CMP for the Spruce No. 1 Mine. Region III's comments on the 2006 draft and final EISs for the Spruce No. 1 Mine expressed concern that the compensatory mitigation plan did not fully mitigate all adverse impacts and was inadequate in terms of its lack of functional assessment and concerns whether headwater stream creation would in fact replace impacted resources. Region III emphasized the importance of headwater stream functions that would be lost and likely not replaced, particularly by conversions of existing drainageways to streams as described in the CMP. In their December 4, 2001, letter the USFWS expressed similar concerns that the proposed mitigation was unlikely "to provide sufficient mitigation for permanent stream and riparian habitat loss and for the losses of the functions and values of the stream to aquatic species in the fill footprint and to the downstream ecosystem."

As discussed below, the project fails to include all appropriate and practicable steps to minimize and compensate for the project's adverse impacts on the aquatic ecosystem as required by 40 CFR 230.10(d). Further, EPA Region III believes that the anticipated level of adverse impacts associated with the Spruce No. 1 Mine will not be adequately offset by the required compensatory mitigation.

1. Proposed mitigation likely will not replace high quality resources in Pigeonroost Branch and Oldhouse Branch

There is no evidence in the peer-reviewed literature that the type of stream creation included in the CMP will successfully replace lost biological function and comparable stream chemistry to high quality stream resources, such as Pigeonroost Branch and Oldhouse Branch. Studies have demonstrated that replacement of streams is among the most difficult and frequently unsuccessful forms of mitigation. Even if stream structure and hydrology can be replaced, it is not clear that replacing structure and hydrology will result in true replacement of functions, especially the native aquatic community and headwater functions. Based upon these studies, the Corps and EPA have stated:

"We recognize that the scientific literature regarding the issue of stream establishment and re-establishment is limited and that some past projects have had limited success (Bernhardt and others 2007). Accordingly, we have added a new paragraph at 33 CFR 332.3(e) (3) [40 CFR 230.93(e) (3)] that specifically notes that there are some aquatic resources types that are difficult to replace and streams are included among these. It emphasizes the need to avoid and minimize impacts to these 'difficult-to-replace' resources and requires that any compensation be provided by in-kind preservation, rehabilitation, or enhancement to the extent practicable. This language is intended to discourage stream establishment and re-establishment projects while still requiring compensation for unavoidable stream impacts in the form of stream corridor restoration (via rehabilitation), enhancement, and preservation projects, where practicable."¹⁹

¹⁹ EPA recognizes that the effective date of the regulations governing compensatory mitigation that were promulgated at 73 Fed. Reg. 19594 (April 10, 2008) is June 9, 2008, and therefore those regulations do not

Furthermore, the USFWS frequently has stated that, “we continue to believe that it is not possible to fully replace the critical aquatic and terrestrial ecosystem functions of healthy headwater streams,” and that USFWS “is not aware of any scientific support for the concept that . . . ditches can be considered biologically equivalent to, or even rough approximations of, flowing streams.”

The streams of Pigeonroost and Oldhouse Branch have been shown to exhibit high water quality and high functioning capacity. Given the difficulty of stream re-establishment to mitigate for impacts to streams in general, Region III believes it is even more unlikely that high value streams such as these can be replaced by on-site stream creation techniques involving conversion of sediment ditches. EPA Region III believes that the mitigation for the Spruce No. 1 project is unlikely to offset the anticipated impacts to an acceptable level.

2. The compensatory mitigation plan is based upon a misclassification of the impacted resources

The starting point for an adequate compensatory mitigation plan is accurate characterization of the impacted resources. Region III believes that the compensatory mitigation plan is based upon a misclassification of impacts to perennial and intermittent streams, thereby resulting in an insufficient baseline from which to design adequate stream compensation.

Overall, through onsite visits and biological data collection, Region III conservatively estimates that, within the mine footprints of Right Fork Seng Camp, Pigeonroost, and Oldhouse Branch, over five miles of stream (~27,000 feet) are perennial. This is in contrast to the DA Permit estimation of 165 feet of perennial waters within the entire project area. This misclassification has a critical impact upon the type of mitigation that would be required to offset these impacts. The resource type plays an important role in the types of expected aquatic communities, the degree in which each resource provides structure and function, and the amount of organic matter and nutrients (and contaminants) ultimately retained or loaded to receiving streams. This misclassification means that the compensatory mitigation plan does not properly account for, and therefore would not offset the full range of adverse impacts related to the project. A more detailed description of EPA’s analysis of stream type is described in Appendix 3.

3. The compensatory mitigation plan lacks an adequate functional assessment

apply to DA Permit No. 199800436-3 (Section 10: Coal River). Nevertheless, the above-quoted statement, taken from the preamble to those regulations, summarizes scientific research and literature that is applicable to consideration of the likely efficacy of the compensatory mitigation proposed for the Spruce No. 1 Mine.

In addition to being based on a misclassification of resource type, the CMP also is based upon an inadequate functional assessment of the impacted resources. Compensatory mitigation must replace the aquatic resource function lost or adversely affected by authorized activities. Therefore, to ensure that the functions are being replaced, the compensatory mitigation must create/restore streams that are capable of sustaining comparable biological, communities and chemical and physical characteristics of the streams that have been eliminated by the mining activity.

The CMP utilized an assessment method referred to as the Stream Habitat Unit (SHU) method to calculate mitigation debits and credits. This assessment entails a combination of linear lengths of impact, habitat assessment scores, and stream hydrological status²⁰. The SHU as presented in the CMP only accounts for the physical aspects of stream condition and fails to account for the interrelationship of water chemistry and biological resources in stream functioning.

The USFWS expressed this concern in regard to the CMP:

“The Stream Habitat Unit (SHU) assessment methodology selected by the applicant only considers the physical characteristics of the stream. It does not include biological or chemical characteristics of the stream. Without those attributes, the assessment does not meet the requirements of a “functional” assessment. The Service recommends that the applicant use an assessment method that incorporates biological and chemical, as well as habitat, characteristics to determine the true function of the stream.”

The basis for the SHU as presented by the CMP is based on the premise that stream habitat (HAV as scored by EPA’s RBP Habitat Assessment) accounts for the total ecological “currency” at the site. This premise has been demonstrated to be flawed. Studies (for example, Fritz et al., 2010) have found no correlation between functional measurements and RBP Habitat Assessments. More importantly, there was no use of existing water chemistry or biological resource measurements factored into the SHU’s ecological currency of the sites. This shortcoming underscores the need for a more thorough investigation of impacts and mitigation offsets.

Since the permittee applied the SHU methodology, which has no functional component, to describe the streams, the compensatory mitigation plan only addresses the physical elements of the streams. As a result of this EPA believes the current CMP does not adequately account for or replace the functional components of the lost streams. Region III does not believe that increased ratios of intermittent or ephemeral streams offsets this inadequacy. While DA Permit No. 199800436-3 (Section 10: Coal River) refers to biological success criteria, the permit terms do not clearly require the replacement of lost

²⁰ Even though the Corps did not finally rely solely on the SHU for mitigation requirements, the Corps did not categorically prevent the permittee from using this approach as a basis for its mitigation plan, and thereby allowing Mingo Logan to use this approach to help justify their mitigation performance and success criteria *a*.

biological function and comparable stream chemistry to meet adequate compensatory mitigation success criteria.

4. Conversion of erosion control channels would be unlikely to successfully replace the impacted resources

Based on observations of other on-bench SMCRA drainage or erosion control ditches (Kirk 1999; Green et al. 2000, and Gingerich 2009), the CMP's proposed conversion of these ditches is unlikely to successfully replace the impacted resources, alone or in concert with other proposed mitigation contained in the CMP. Over 50% of the linear stream length in the Spruce mitigation plan relies on conversion of on-bench SMCRA drainage or control ditches. On-bench sediment ditches are a consequence of SMCRA-required Best Management Practices (BMPs) to control runoff. Data show that water quality in these types of sediment ditches in the MTM region is typically highly degraded as a result of water in these ditches percolating through mine spoil. Even when the sediment ditches are enhanced for benthic substrata and riparian vegetation, such as through adding boulder clusters every 500-1000 feet, resulting water quality will likely be so degraded that the ditches will not meet or exceed pre-mining water chemistry baselines.

As described previously, degraded water chemistry (such as the addition of conductivity and selenium as a result of water percolation through mine spoil) typically results in degraded biological communities. As a result of this degraded water chemistry, these created waterbodies would be unlikely to support the healthy and diverse biological communities that they are intended to replace. These created streams would be considered degraded and would be unlikely to successfully replace Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution and healthy biological communities and function, either alone or in concert with other proposed mitigation contained in the CMP.

A more detailed discussion of on-bench sediment ditches for mitigation is provided in Appendix 3.

5. The CMP does not account for the loss of ecological services of headwater streams

Another compelling problem with the Spruce No. 1 CMP is the separation of the ecological elements into single, separate aspects of the ecology with limited treatment of the interconnectedness of the entire ecosystem. The forested slopes and coves located within the Spruce No. 1 project area are drained by a dendritic mosaic of ephemeral, intermittent and perennial headwater streams and water courses. The watershed is inextricably linked with the stream system that drains it. The overwhelming bulk of the organic matter that sustains the stream biota in Spruce Fork is a function of the upstream environment.

In a pre-mined condition receiving streams are recipients of allochthonous (i.e., material originating from outside of the stream system) material and water inputs (i.e., surface, subsurface and groundwater) from the surrounding forested communities. The post-mined environment, however, creates severely altered conditions in stream courses that are not destroyed by valley fills. Those alterations include:

- a. Elimination of water and processed organic material from former upstream tributaries that will be under valley fills.
- b. Altered contributions of water and allochthonous material from the surrounding upland watershed. This is due to the altered character of the soil and vegetation communities in a post-mine environment.
- c. Altered hydrograph with new flow regimes that markedly depart from that under which the streams have evolved.
- d. Altered timing, temperature and chemical composition of post-mine discharges of water to receiving streams.

Mountaintop mining and associated valley fills profoundly alter the contributing watershed. Effectively the new landscape widely departs from that within which the stream network has evolved. The subsequent ecosystem is an entirely new system. Assumptions that much of the structure and function of the pre-mined conditions can be recaptured with mitigation are very optimistic and highly speculative.

In summary, Region III believes that it is unlikely that the adverse impacts associated with the Spruce No. 1 project as authorized would be offset by the mitigation described in the CMP.

D. Summary

In summary, Region III believes that Spruce No. 1 Mine would eliminate the entire suite of important physical, chemical and biological functions provided by the streams of Pigeonroost Branch and Oldhouse Branch including maintenance of biologically diverse wildlife habitat. Region III maintains that impacts to these functions at the scale associated with this project will result in significant degradation (40 CFR 230.10(c)) of the Nation's waters, particularly in light of the extensive historic stream losses in the Spruce Fork and Coal River watersheds. Region III does not believe the potential impacts of these stream resources can be adequately mitigated to reduce the impacts to an acceptable level by the compensatory mitigation described in the CMP.

VI. Other Considerations

As set forth above, Region III has determined that the impacts from the discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal River) described in Section V would be likely to have an unacceptable

adverse effect on wildlife that will not be offset by the compensatory mitigation plan. This section identifies other, additional considerations that are of concern to the Region but are not part of the basis for our conclusion that the impacts would be likely to have an unacceptable adverse effect.

A. Impacts From Activities Dependent Upon Specification of Pigeonroost Branch and Oldhouse Branch as Disposal Sites for the Construction of Valley Fills and Sedimentation Ponds for the Spruce No. 1 Mine

To the extent that discharge of excess spoil to areas outside jurisdictional waters and other mining-related activities, such as deforestation, necessarily depend upon specification of Pigeonroost Branch and Oldhouse Branch for construction of valley fills and sedimentation ponds for the Spruce No. 1 Mine, Region III has considered those impacts.

1. Migratory Birds

Approximately 2,278 acres of deciduous forests will be destroyed by the Spruce No. 1 Mine. Among the many migratory birds likely to breed in the project area, there are six species that the USFWS has designated as Birds of Conservation Concern within the Appalachian Mountains Bird Conservation Region that may be impacted by Mountaintop Mining – Valley Fills. These include the cerulean, Kentucky, Swainson’s and worm-eating warblers, the wood thrush, and the Louisiana waterthrush. The water-dependent Louisiana waterthrush was discussed in Section V.B.2.d above. The other five avian species are also designated as BCC species within the USFWS’s Northeast Region as a whole and nationally (U.S. Fish and Wildlife Service 2008). The first four are also considered to be among the 100 most at-risk bird species in North America (Wells 2007).

Cerulean and worm-eating warblers are also both area-sensitive species that rely on large blocks of intact, mature, interior forest habitats to support productive breeding populations. The cerulean warbler breeding population is thought to have declined by about 75% over the past 45 years – the most dramatic decline of any North American warbler monitored by the Breeding Bird Survey (Sauer et al. 2005). Both species are threatened by the loss and fragmentation of these habitats (U.S. Fish and Wildlife Service 2007, Wells 2007). Deforestation associated the Spruce No. 1 Mine may adversely impact their breeding populations (Weakland and Wood 2005, Wells 2007).

The project also could impact other bird species that rely on mature forest habitats. Bird species that rely on mature forest habitats that are abundant in the Appalachian region are Kentucky warblers in the understory; and wood thrush, Swainson’s warbler, Acadian flycatcher, and ovenbirds in mesic hardwoods. These and many other avian species are all impacted by forest fragmentation and habitat loss, such as that which would occur in connection with the Spruce No. 1 mine. Spatial analyses of the effect of Appalachian mountaintop mining on interior forest indicate that the loss of interior forest is 1.75-5.0 times greater than the direct loss of forest due to mountaintop mining. Investigators

concluded that the loss of Appalachian interior forest is of global significance due to the rarity worldwide of large expanses of temperate deciduous forest.

The Spruce No. 1 Mine will impact mature forested habitat, over a substantial timeframe, replacing the impacted areas with reclaimed areas dominated by grasses and herbaceous species. Many reclaimed areas such as those expected at Spruce No. 1 show little or no regrowth of woody vegetation even after 15 years. The PEIS found significant differences in bird populations between forested and reclaimed sites, namely the loss of the above-mentioned species, and subsequent replacement by more opportunistic grassland species. Also, the loss of the healthy headwater areas of Spruce Fork will reduce the feeding and foraging areas available to specialist bird species in this ecoregion. This reduction in available habitat could potentially impact their viability in the Spruce Fork watershed and the larger ecoregion.

In recent communications with Region III (August 2010) in regards to EPA's Proposed Determination on the Spruce No. 1 Mine the USFWS indicated its belief that past selective logging in some parts of the project area would not preclude use of the site by forest interior species of migratory birds or that birds currently using the project area during the breeding season will be unaffected by the mine and associated valley fills. The USFWS evaluated the terrestrial habitats of the project area and concluded that construction of the mine was likely to impact migratory birds via the loss and fragmentation of forest habitat, decreasing habitat heterogeneity, increasing isolation of populations, and increasing exposure to nest predators and parasites (U.S. Fish and Wildlife Service 1998).

The USFWS expressed concerns specific to bird populations within the Coal River Sub-basin related to adverse impacts of the Spruce No. 1 Surface Mine. These concerns included ... "direct loss of habitat and direct and indirect loss of food resources, for forest interior and riparian-obligate species of migratory birds, including six species the Service considers Birds of Conservation Concern (i.e., cerulean, Kentucky, Swainson's, and worm-eating warblers; Louisiana waterthrush; wood thrush)" (USFWS, 2008).

The USFWS also continues to believe that construction of the Spruce No. 1 Surface Mine will adversely impact these and other forest-breeding migratory birds. The valley fills will result in the permanent loss of headwater streams that may be used by Louisiana waterthrushes. The USFWS indicates they are unaware of peer-reviewed research that suggests that these birds will simply relocate to an adjacent, unimpacted watershed and have comparable survival and reproductive success. The downstream increases in conductivity, selenium and perhaps other contaminants are also likely to adversely affect those waterthrushes not excluded by the direct impacts of the fill via impacts to their food base. In some freshwater food webs, selenium has bioaccumulated to four times the level considered toxic, which can expose birds to reproductive failure when they eat fish or insects with high selenium levels.

While the work of the Appalachian Regional Reforestation Initiative (ARRI) shows substantial promise for better reclamation of mined lands, it has not been demonstrated

that these reclaimed areas will generate and sustain forests that provide habitat characteristics and qualities comparable to those of native forest. For these reasons, the USFWS believes that construction of the Spruce No. 1 Surface Mine is likely to result in permanent and/or long-term loss of breeding habitats important to several migratory bird species of conservation concern.

2. Bats

Large-scale mountaintop removal/valley fill mining has been identified among the threats to bat species in the region according to information supplied to EPA by the USFWS. Loss of the bat's habitat, foraging areas, and food sources – in conjunction with recently identified concerns related to white-nose syndrome – may result in unacceptable adverse impacts to these wildlife resources.

As set forth in Section IV.B.5., it is possible that Indiana bats could occur in or near the project area, and that they could be impacted by the loss of forest habitat associated with the Spruce No. 1 Mine and by the loss of headwater streams, riparian areas and associated aquatic and terrestrial insects, as well as by the downstream degradation of these resources likely to be caused by the project.

In addition to Indiana bats, the USFWS was recently petitioned to list two other bat species, the eastern small-footed bat and northern long-eared bat, under the Endangered Species Act (Center for Biological Diversity 2010). Like Indiana bats, these two species are susceptible to population-level impacts from White Nose Syndrome (WNS), which has devastated some populations of eastern bats. Both species occur in the vicinity of the Spruce No. 1 Surface Mine, and both were captured during mist net surveys at the project site. Five eastern small-footed bats and 16 northern long-eared bats were captured during mist net surveys in 2004, representing 7.6 and 24.2 percent, respectively, of all bats captured (U.S. Army Corps of Engineers 2006, Appendix M). Given the rapid spread and potentially dramatic effects of WNS, the potential exists that even more bat species could decline to the point that listing under the ESA will be warranted.

If WNS affects West Virginia bats as it has bats in other states, and if large die-offs occur, it will further complicate the already complex challenge of conserving bat species. Previous mining and logging activities and forest loss have also been identified as having adverse affects on bat populations. Commonly used reclamation techniques, many of which are designed to minimize erosion and provide backfill stability, are incompatible with re-establishment of trees necessary for successful roosting by bats. Such reclamation techniques have the potential to further stress bat populations.

B. Environmental Justice Concerns

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. Executive Order 12898

directs: “To the greatest extent practicable...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...”

According to the 2000 United States Census, Spruce No. 1 is located in a census block group which contains 335 people. A census block group is a geographical unit used by the U.S. Census Bureau (Bureau) which is between a census tract and a census block in size and scale. It is the smallest geographical unit for which the Bureau publishes data. Census block groups generally contain between 600 and 3,000 people, with a target size of 1,500 people.

Spruce No. 1 is located in a census block group where the average per capita income is \$15,411. This is over \$6,000 less than the national average of \$21,587 and over \$1,000 less than the West Virginia state average of \$16,477. The average median family income is also almost \$13,000 less than the national average of \$52,029. Moreover, 24% of the residents of Logan County live below the poverty line which also exceeds state and national averages.

Region III notes that the Corps included a discussion of environmental justice in the Spruce No. 1 EIS, however, as noted in EPA's comment letters in June and October 2006, the Region III remains concerned that the Corps did not fully consider and address the potential for disproportionately high and adverse effects on this population. EPA's environmental justice analysis indicates that there may be a disproportionately high and adverse impact on the low income population affected by the mining activity. Additionally, EPA remains concerned that the local community did not have the necessary information, or the opportunity, to meaningfully participate in the EIS process. Specifically, EPA is concerned the community was not informed when changes were made to different aspects of the mine project during the permitting and EIS process and therefore was not able to meaningfully comment on the final aspects of the mine.

Consideration of these issues in the context of authorizing the significant disturbance associated with construction of valley fills associated with the Spruce No. 1 Mine should include a characterization of the status of residents near the site and the conditions they face including any effects relating to the proximity of the blasting zone, locations of discharges of fill material, truck traffic, noise, fugitive dust, and habitat loss. Information concerning sources of drinking water for the effected populations (including municipal water supplies and private sources of drinking water including streams and/or wells) also should be considered.

The cultural implications of mountain top mining also were not sufficiently considered. The mountains affected by Spruce No. 1 are viewed as a cultural resource by many residents. In many cases the mountains have helped define their society and influence their daily lives. For example, the mountain ridges of southern West Virginia have for over two centuries been viewed largely as a “commons,” where local residents have

gathered wild medicinal herbs such as American Ginseng (*Panax quinquefolius*) and Goldenseal (*Hydrastis Canadensis*). In many cases, collection of these wild herbs provide much needed extra income to local communities during times of unemployment or economic hardship (Baily 1999, Hufford, 1997). Removing these mountains may have profound cultural changes on the residents in the area so it is important that cultural impacts be considered as well.

It is important that consideration be given as to whether the types of impacts described above will extend over a broad area or will be concentrated in particular areas. Detailed maps outlining the residential areas in relation to these activities may help accomplish this. It is also important that the effects be considered both independently and cumulatively. Considering the effects cumulatively provides the most realistic “snapshot” of what the community will be facing when the project reaches fruition. Having this information readily available will help engage the affected communities during public outreach and ensure that they can be meaningfully involved.

EPA considers action pursuant to section 404(c) within the scope of the policy directive of Executive Order 12898. A section 404(c) action has the potential to affect human health or the environment of low-income or minority populations. Accordingly, EPA includes environmental justice concerns when undertaking an action pursuant to section 404(c). In this case, Region III conducted a public hearing on May 18, 2010 and received comments both orally and in writing. Region III has considered that members of the community expressed concern about loss of jobs and tax revenue (supporting local communities and schools) in the event that EPA's Section 404(c) action would preclude any activities currently authorized at the Spruce No. 1 Mine. At the same time, Region III also has considered that members of the community have expressed concern regarding the adverse environmental and cultural aspects of the project described above. EPA also has received a petition from a variety of stakeholders raising concerns related to environmental justice issues associated with mountaintop mining.

In order to satisfy Executive Order 12898, EPA has considered whether there is a “...disproportionately high and adverse human health or environmental effects...” from its regulatory action. The scope of the inquiry for purposes of EPA's environmental justice analysis is directly tied to the scope of the regulatory action that EPA is taking. In the context of a Clean Water Act Section 404(c) action, EPA is authorized to prohibit, restrict, or deny specification (or withdraw specification) of the discharge of dredged or fill material at defined sites in waters of the United States whenever it determines that use of such sites for disposal would have an unacceptable adverse impact on “municipal water supplies, shellfish beds, fishery areas (including spawning and breeding areas), wildlife, or recreational areas.”

Accordingly, EPA has considered its environmental justice analysis in the context of this Recommended Determination under Section 404(c) action the potential effects prohibiting the discharge will have on the municipal water supplies, shellfish beds, fishery areas, wildlife and recreational areas (i.e., 404(c) resources) of the project site. EPA also considered whether those effects, if any, of EPA's 404(c) action on the 404(c)

resources will have a “disproportionately high and adverse human health or environmental [effect]” on “minority populations and low-income populations” of the project area.

EPA concludes, to the greatest extent practicable, after performing the EJ analysis contemplated in Executive Order 12898, and incorporating public comment, that this Recommended Determination under 404(c) in and of itself or if incorporated within any Final Determination, will not have a disproportionately high and adverse human health or environmental effect on the low-income and minority populations of the project area. EPA notes that the scope of this Recommended Determination is limited to withdrawal of specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for the discharge of dredged and/or fill material for the construction of valley fills and sediment ponds associated with the Spruce No. 1 Mine as currently authorized. This action neither prohibits nor authorizes coal mining.

C. Public Health

As interest in the overall environmental and human health effects from mountain top mining has been increasing, a growing body of research has suggested that health disparities are not uniformly distributed across the Appalachian region but are concentrated in areas, like the Spruce No. 1 Mine project area, where MTM activity takes place. Region III has conducted a preliminary review of existing literature on health impacts from MTM. The studies reviewed by Region III sought to evaluate whether associations between MTM and health exist. These studies do not provide direct assessments of environmental air and water quality in mining areas in relation to individual exposures and health outcomes. This more comprehensive research, including environmental chemical analyses and biological monitoring, would require significantly greater study than is appropriate for this Recommended Determination.

However, the results of these associational studies identify significant correlations between MTM activity and a variety of health disparities. These study findings indicate that health disparities are elevated in Appalachian coal mining regions for mortality rates for chronic respiratory, cardiovascular, and kidney disease, and for some forms of cancer including lung cancer. These studies by their nature could not and do not establish any causal linkage between MTM and these elevated rates of adverse health effects, but because they point to significant associations between MTM and elevated rates of adverse health impacts, the results warrant more research using rigorous epidemiological methods. The existing body of literature suggests that various negative health outcomes are not the result of a single exposure, but may reflect chronic exposures to multiple environmental contaminants, both air and/or water, which will vary for each individual.

The studies noted the following:

- Residents of areas in which coal mining activities take place have higher risk of cardiovascular disease (CVD) (OR=1.22, 95% CI 1.14-1.30), angina or coronary heart disease (CHD) (OR=1.29, 95% CI=1.19-1.39), and heart attack (MI) (OR=1.19, 95% CI

= 1.10-1.30) after adjusting for smoking, alcohol, gender, education, race, income, physician supply, and metropolitan status.

- Lung cancer mortality is higher in heavy coal-mining areas, followed by all other areas of Appalachia and the nation ($p < .001$) after accounting for covariates of gender, education, poverty, race, urban status, smoking, southern states, and Appalachian country.
- Total chronic heart, respiratory, and kidney disease, and kidney disease mortality rates were significantly higher in coal mining areas of Appalachia than non-coal mining areas.
- Among West Virginia adults, residential proximity to heavy coal production was associated with poorer health status and with higher risk for cardiopulmonary disease, chronic lung disease, hypertension, and kidney disease, after controlling for covariates (Spruce No.1 mine is in an area characterized by heavy coal production).
- Distance-weighted, at-risk population coal mining exposure measure was significantly correlated to cancer mortality in WV. For total cancer and three cancer-type subgroups, exposure was correlated after controlling for smoking rates. The variables had positive spatial autocorrelation and were spatially dependent. All components of mining (injection, preparation plants, impoundments, and mining sites) were related to one or more cancer types.
- Volume of coal mining significantly related to hospitalization risk for hypertension (odds increased 1% for each 1462 tons of coal) and COPD (odds increased 1% for each 1873 tons of coal) controlled for age, gender, insurance, co-morbidities, county poverty, county and social capital.
- The heaviest coal mining areas of Appalachia had the poorest socioeconomic conditions. Before adjusting for covariates, the number of excess annual age-adjusted deaths in coal mining areas ranged from 3,975 to 10,923, depending on years studied and comparison group.
- Living in proximity to mining areas increases the odds of low birth weight. In mining areas, odds of low birth weight are increased by 14 to 16% depending on the amount of mining as compared to areas with no coal mining.
- Ecological integrity was inversely related to age-adjusted cancer mortality rates (total $p < .01$; digestive, breast, and respiratory $p < .01$; urinary $p < .05$), controlled for poverty, access to health care providers, urbanization, education, smoking. Ecological integrity was significantly related to mining and cancer mortality and mining was significantly related to total cancer mortality.

D. Cumulative Impacts

Fundamental to the Section 404(b)(1) Guidelines “is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.” 40 C.F.R. § 230.1(c).

The Section 404(b)(1) Guidelines (at 40 C.F.R. § 230.11(g)) also direct that factual findings be made regarding cumulative impacts on the aquatic ecosystem and that those findings be considered in determining whether the discharge complies with the foregoing restriction. To that end, the Section 404(b)(1) Guidelines describe the factual finding that must be made with respect to cumulative impacts as follows:

Determination of cumulative effects on the aquatic ecosystem. (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

For purposes of this analysis, Region III has considered cumulative impacts to the Coal River sub-basin (891 mi²) and the Spruce Fork sub-watershed (126.4 mi²) if the Spruce No. 1 Mine is constructed as authorized by DA Permit No. 199800436-3 (Section 10: Coal River) and other reasonably foreseeable (proposed and authorized but not constructed) surface mining projects within the Coal River sub-basin are constructed. This cumulative effects analysis also takes into consideration the past and present mining projects within the sub-basin and sub-watershed, and the extent to which they have affected the current baseline conditions within the sub-basin and sub-watershed (see Figure 14).

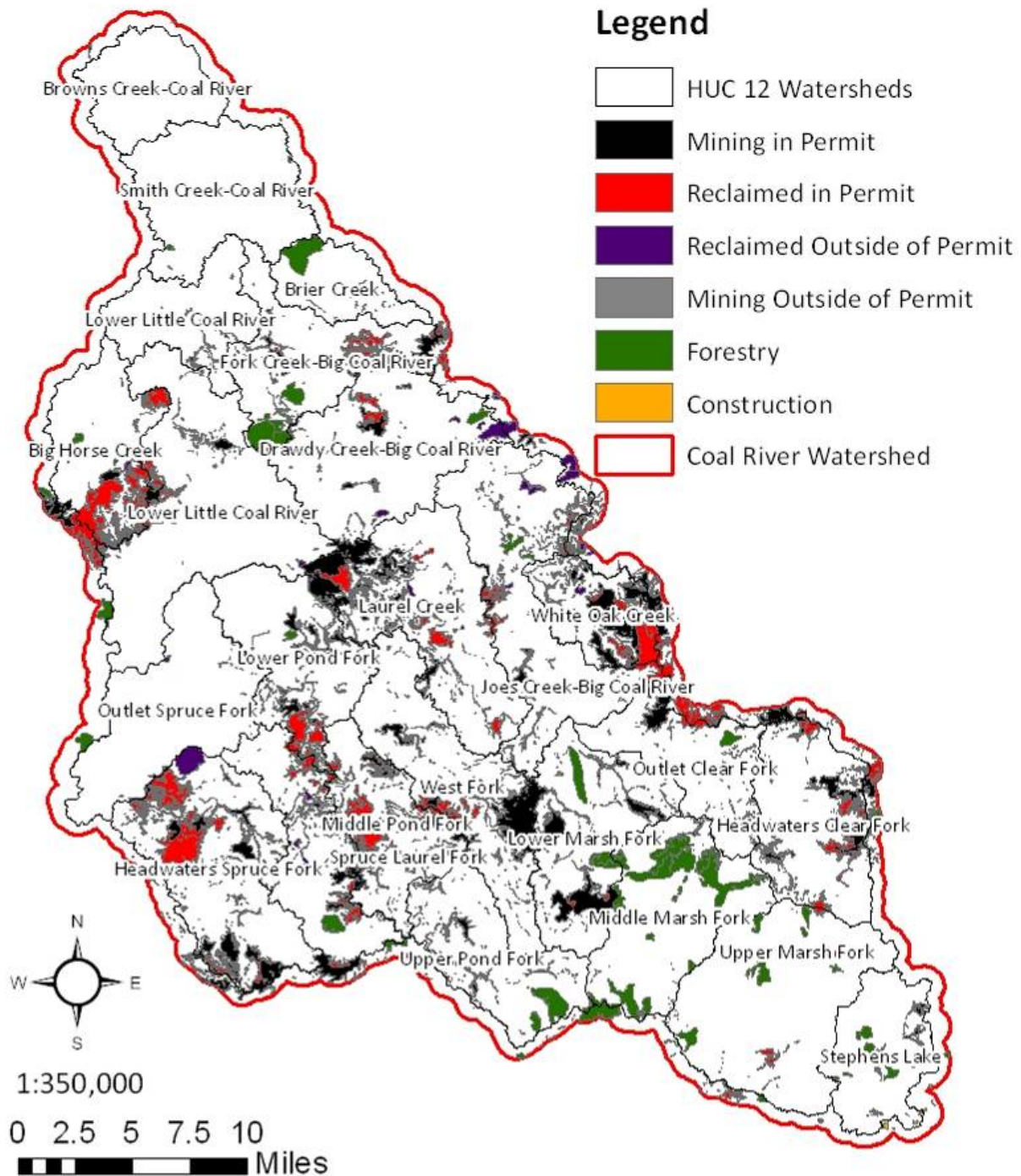


Figure 14: Illustration of the types of disturbance currently found in the Coal River sub-basin.

As has been described in Section IV.A.2., the Coal River sub-basin and the Spruce Fork sub-watershed are already impacted by mining activity. Based upon the National Land Cover Database (NLCD) change product for 1992-2001 and WVDEP's GIS mining files, more than 257 past and present surface mining permits have been issued in the Coal River sub-basin, which collectively occupy more than 13% of the land area (see Figure

13). In the Spruce Fork sub-watershed, more than 34 past and present surface mine permits have been issued, which collectively occupy more than 33% of the land area. The proposed project will affect an additional 2,278 acres (3.56 mi²), which is equivalent to approximately 2.8% of the Spruce Fork sub-watershed. This percentage of land cover affected by surface mines will continue to increase in the Coal River sub-basin, as additional projects are proposed and authorized.

A 1997 WVDEP ecological assessment of the Coal River sub-basin indicated that because the sub-basin is becoming increasingly impaired due to stressors such as mining, there is a need to protect the remaining quality resources, highlighting the need to “[l]ocate and protect the few remaining high quality streams in the Coal River watershed....” Pigeonroost Branch and Oldhouse Branch, two of the streams directly affected by the proposed action, are high quality resources that support an exceptionally high number of mayfly taxa, both within the Central Appalachian Region and statewide (see Appendix 1). By directly impacting these streams, which serve as refugia for aquatic life and potential sources for recolonizing nearby waters, the proposed action will be likely to have a significant cumulative effect on the aquatic ecosystem integrity in the sub-basin.

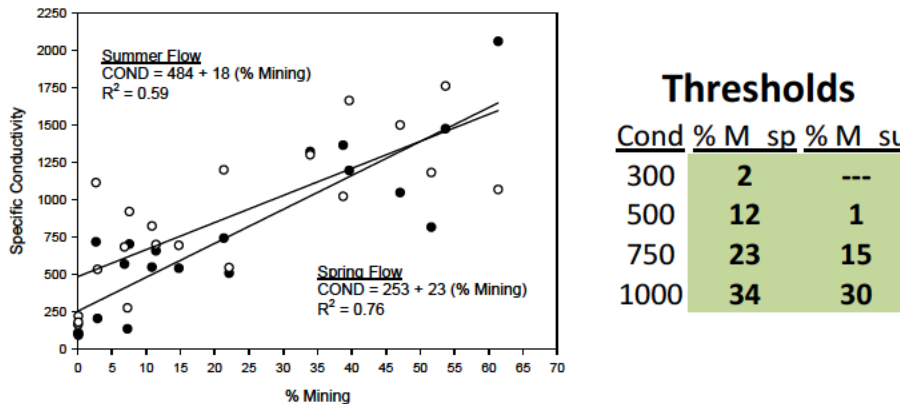
EPA is aware of at least 11 additional mining operations either proposed or authorized but not constructed in addition to Spruce No.1 in the Coal River sub-basin. Construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) along with these additional projects in the Coal River Sub-basin, if constructed, would directly impact approximately 29.4 miles of stream channels, and would be likely to have significant secondary and cumulative effects on downstream waters in the Coal River sub-basin. Impacts from these projects can be expected to include reduced freshwater dilution, reduced headwater stream functional inputs, increased discharges of pollutants from the valley fills, including total dissolved solids (TDS) and selenium, and the potential to contribute to existing impairments within the Spruce Fork watershed and the Coal River sub-basin.

The Little Coal watershed contains 98 miles of impaired streams (33% of the streams in the watershed), and the Coal River sub-basin has 743 miles of impaired streams (30% of the streams in the sub-basin). WVDEP has listed these stream segments for selenium and biological impairment. The additional fills associated with the proposed action, in combination with past and present mining by the applicant and other mining in the sub-basin, will likely cause or contribute to significant cumulative adverse impacts to the stream resources in the Coal River sub-basin, and will likely contribute to current water quality impairments within the sub-basin.

Preliminary results from current research based upon WVDEP data show a strong correlation between the percentage of a watershed that is disturbed by mining activity and downstream conductivity levels (see Figure 15).

Coal River Watershed

Relationship between % Mining and Conductivity



*Analyses based on mining only sites; Equations do not differ significantly.

Figure 15: Coal River Watershed: Mining and Conductivity

Levels of conductivity on the mainstem of Spruce Fork, Pond Fork and the Little Coal River exceeded 500 $\mu\text{S}/\text{cm}$ almost every time WVDEP sampled these sites in 1997, 2002-2003, 2005 and 2008. The US Army Corps of Engineers Huntington District also reported conductivity values as part of the baseline water quality for Spruce Fork upstream and downstream of the proposed project area in the EIS for the proposed project (U.S. Army Corps of Engineers Huntington District 2006, DEIS Spruce No. 1 Mine). The DEIS reported that the minimum, average and maximum conductivity levels for Spruce Fork upstream of the propose project area were 112, 656 and 1130 $\mu\text{S}/\text{cm}$ at that time, indicating that on average the conductivity in Spruce Fork was already elevated greater than 500 $\mu\text{S}/\text{cm}$, and maximum conductivity levels exceeded twice that level.

Because construction of the Spruce No. 1 project and 11 additional mining operations would increase the percent of the sub-basin that is impacted by mining activity, it can be expected that these water quality effects will likely be exacerbated by these additional mines. EPA believes that the Spruce No. 1 project, in conjunction with the other mining operations either under construction or proposed for the Coal River sub-basin, will be likely to contribute to the significant cumulative loss of aquatic resources and degradation of water quality.

VII. Conclusions and Recommended Determination

Based on the foregoing analyses and upon consideration of the public comments received in response to Region III's Proposed Determination, Region III has determined that discharges of dredged and/or fill material to Pigeonroost Branch and Oldhouse Branch for the purpose of constructing the Spruce No. 1 Surface Mine as currently authorized by

DA Permit No. 199800436-3 (Section 10: Coal River) would likely have unacceptable adverse effects on wildlife. DA Permit No. 199800436-3 (Section 10: Coal River) authorizes construction of valley fills and sedimentation ponds and other discharges into Pigeonroost Branch and Oldhouse Branch that will bury approximately 6.6 miles of high quality headwater streams. Pigeonroost Branch and Oldhouse Branch support diverse and healthy biological communities comparable with conditions in nearby White Oak Branch, recognized by WVDEP as supporting least-degraded, reference quality conditions. Pigeonroost Branch and Oldhouse Branch represent streams within the larger Spruce Fork sub-watershed and Coal River sub-basin that remain relatively free of water quality degradation. As such, Pigeonroost Branch and Oldhouse Branch are valuable in and of themselves and within the context of the Spruce Fork sub-watershed and Coal River sub-basin.

As currently authorized the DA Permit discharges to Pigeonroost Branch and Oldhouse Branch would bury wildlife that live in those streams or within the footprint of the valley fills and minethrough areas. Other wildlife will lose important headwater stream habitat on which they depend for all or part of their lifecycles.

Wildlife impacts from the activities authorized by the permit will not be limited to direct burial of wildlife. Burial of Pigeonroost Branch and Oldhouse Branch would likely result in effects to downstream waters and downstream wildlife caused by the removal of functions performed by the buried resources and by transformation of the buried areas into sources that contribute contaminants to downstream waters. In addition, currently authorized discharges to Pigeonroost Branch and Oldhouse Branch would be likely to contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life would likely contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life.

Particularly in light of the high quality of the impacted resources, it is unlikely that the CMP for the project would offset these impacts. The proposed on-site created streams will be unlikely to replace the physical, chemical, and especially biological functions of Pigeonroost Branch and Oldhouse Branch.

For these reasons, I find that discharges to Pigeonroost Branch and Oldhouse Branch as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River) would be likely to have unacceptable adverse effects on wildlife.

Region III notes that, in addition to the adverse effects that form the basis of this Recommended Determination, there are other impacts about which Region III continues to have concerns. To the extent that discharge of excess spoil outside jurisdictional waters, deforestation, and other activities associated with the project depend upon specification of Pigeonroost Branch and Oldhouse Branch as disposal sites, adverse impacts on wildlife would likely result from those dependent activities. In addition, impacts from the project will contribute to cumulative impacts from multiple surface mining activities in the Coal River sub-basin. Region III continues to be concerned regarding environmental justice issues.

Accordingly, pursuant to Section 404(c) of the Clean Water Act and its implementing regulations at 40 C.F.R. Part 231 and for the reasons set forth herein, it is my recommendation that the specification embodied in DA Permit No. 199800436-3 (Section 10: Coal River) of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material for construction of the Spruce No. 1 Surface Mine be withdrawn.

Dated: September 24, 2010

Shawn M. Garvin
Regional Administrator
EPA Region III

Eric Somerville/R4/USEPA/US

To Timothy Landers, Matthew Klasen

11/02/2010 06:09 PM

cc

bcc

Subject Premier Elkhorn letter

the MSWord files

-----Forwarded by Eric Somerville/R4/USEPA/US on 11/02/2010 06:07PM

To: Eric Somerville/R4/USEPA/US@EPA
From: Wanda Hudson/R4/USEPA/US
Date: 11/02/2010 05:31PM
Subject: Re: recipients of the Premier Elkhorn letter

Here is the final letter & enclosure...gotta run!
(See attached file: PremElkLtrRevised.doc) (See attached file: PremElk Enclosure 1.doc)
(See attached file: PremElk Enclosure 2.doc)

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EPA - Water Protection Division
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Eric Somerville---11/02/2010 02:55:27 PM---Recipients of the pending Premier Elkhorn letter should include the following: Todd Hagman: todd.e.

Fro Eric Somerville/R4/USEPA/US
m:
To: Wanda Hudson/R4/USEPA/US@EPA
Dat 11/02/2010 02:55 PM
e:
Sub recipients of the Premier Elkhorn letter
ject
:

Recipients of the pending Premier Elkhorn letter should include the following:

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Jim Townsend:
Lee Anne Devine:
Justin Branham:
Joe Blackburn:

(b) (6)

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Sandy Gruzesky: sandy.gruzesky@ky.gov




p.s. I just noted on a read-only version of the letter on the G:\ drive, that Table 1 in the middle of the letter is split onto two pages. This should clearly not be the case, but I am uncertain whether Cassie caught that before bring the hard copy to Jim's office. I have also not been able to reach Phil Mancusi since first alerting him of the letter over an hour ago, so I do not know if he has or will have any changes to make.

FYI- the letter itself is on the G:\ drive here:

G:\1 WCOB\2 - SMT\Coal Mining ECP\2. MOU ECP Permits - PreNotification & 60 Days Started\LRL 2007-594 Premier Elkhorn 898-0800\CWA 404_EPA review\PremElk letter R4 & HQ_11.2.2010.doc

-Eric

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U.S. Environmental Protection Agency, Region 4
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somerville.eric@epa.gov  - PremElkLtrRevised.doc  - PremElk Enclosure 1.doc  - PremElk Enclosure 2.doc

ATTACHMENT REDACTED - DELIBERATIVE

Nancy Stoner/DC/USEPA/US

11/02/2010 06:49 PM

To "Greg Peck"

cc

bcc

Subject Fw: Final Draft Elkhorn Comment Letter

(b) (5)

I'm sure whatever we sent was fine.

Gregory Peck

----- Original Message -----

From: Gregory Peck

Sent: 11/02/2010 11:48 AM EDT

To: Nancy Stoner; Bob Sussman

Cc: Matthew Klasen; MichaelG Lee; Christopher Hunter; Kevin Minoli

Subject: Final Draft Elkhorn Comment Letter

Nancy/Bob

(b) (5)

Greg



ATTACHMENT REDACTED - DELIBERATIVE

Mining Elkhorn HQ Comments NOV 2 10.doc

Christopher
Hunter/DC/USEPA/US
11/02/2010 07:32 PM

To Tanya Code
cc David Evans, Brian Frazer
bcc
Subject Revised draft email to OEJ on Spruce No. 1

Tanya, here is a revised draft email for Denise to review. Let me know if any other changes are needed. Thanks

Hello Charles,

(b) (5)



Thank you

Chris Hunter
U.S. Environmental Protection Agency
Office of Wetlands, Oceans, & Watershed
(202) 566-1454

hunter.christopher@epa.gov



- Spruce RD 092410.doc



Recommended Determination of the U.S. Environmental Protection Agency
Region III Pursuant to Section 404(c) of the Clean Water Act
Concerning the Spruce No. 1 Mine, Logan County, West Virginia



U.S. Environmental Protection Agency
Region III

September 24, 2010

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I. Executive Summary

The Spruce No. 1 Mine as currently authorized Department of the Army (DA) Permit No. 199800436-3 (Section 10: Coal River), is one of the largest mountaintop mining projects ever authorized in West Virginia. If it is fully constructed, it will disturb approximately 2,278 acres and bury approximately 7.48 miles of streams.

As the phrase suggests, "mountaintop mining" involves removing the top of a mountain in order to recover coal seams contained within the mountain. Explosives are used to break apart the mountain's bedrock, and earth-moving equipment is used to remove the excess rock, soil, and debris (called "spoil") that formerly had composed the portions of the mountain above and immediately below the coal seams. The fractured material is larger in volume than when it was intact, fused bedrock within the mountain. The amount of spoil that may be placed on the mined area is also limited due to stability concerns. Hence mountaintop mining generates large quantities of "excess spoil" (i.e., volumes of rock, soil, and debris that cannot be placed back in the mined area) that are deposited in valleys, thereby burying streams that flow through those valleys. In this case, if the Spruce No. 1 Mine is constructed as currently authorized, it will bury headwater stream ecosystems under 110 million cubic yards of excess spoil.

The Spruce No. 1 Mine has a lengthy and complex history. The DA Permit No. 199800436-3 (Section 10: Coal River) (DA Permit) was issued by the US Army Corps of Engineers, Huntington District (Corps) in January 2007 authorizing the Mingo Logan Coal Company to construct six valley fills, associated sedimentation structures, and other discharges of fill material to the Right Fork of Seng Camp Creek, Pigeonroost Branch, Oldhouse Branch, and their tributaries. Due to litigation and an agreement with environmental groups, operations have been limited to the Seng Camp Creek watershed and as part of that agreement one valley fill is partially constructed.

Throughout review of the project, the U.S. Environmental Protection Agency has raised concerns regarding adverse impacts to the environment. Additionally, data and information have become available since permit issuance, which have confirmed EPA's earlier concerns regarding the potential for adverse water quality impacts, the potential for cumulative impacts, the availability of further avoidance and minimization measures and problems with the proposed mitigation measures.

On April 2, 2010, the U.S. Environmental Protection Agency Region III (EPA Region III or Region III) published in the Federal Register a Proposed Determination to prohibit, restrict or deny the specification or the use for specification (including withdrawal of specification) of certain waters at the project site as disposal sites for the discharge of dredged and/or fill material for the construction of the Spruce No. 1 Mine. Region III took this step because it believed, despite the regulatory review intended to protect the environment, that discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) could destroy wildlife habitat and cause significant degradation of downstream aquatic ecosystems and therefore could have unacceptable adverse effects on wildlife.

A public hearing was conducted on May 18, 2010. Region III received over 100 oral comments and over 50,000 written comments both supporting and opposing its Proposed Determination. Region III has carefully considered the comments received and conducted additional analysis, which will be described herein, before rendering this Recommended Determination.

Based on the foregoing analysis and upon consideration of the public comments received in response to Region III's proposed determination, Region III believes that discharges of dredged and/or fill material to Pigeonroost Branch and Oldhouse Branch for the purpose of constructing the Spruce No. 1 Surface Mine as currently authorized by DA Permit would likely have unacceptable adverse effects on wildlife. For this reason, it is the recommendation of the Regional Administrator that the specification embodied in DA Permit No. 199800436-3 (Section 10: Coal River) of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material for construction of the Spruce No. 1 Surface Mine be withdrawn.

The goal of protecting water quality, plant and animal habitat, navigable waters, and other downstream resources requires as its first step the protection of headwater streams. Headwater streams perform services similar to those performed by capillaries in the human circulatory system. They are the largest network of waterbodies within our ecosystem and provide the most basic and fundamental building blocks to the remainder of the aquatic and human environment. As set forth herein, Pigeonroost Branch and Oldhouse Branch represent some of the very few remaining streams within the Spruce Fork sub-watershed and the Coal River sub-basin that represent "least degraded" conditions. They support diverse and healthy biological communities. As such, they are valuable in and of themselves and within the context of the Spruce Fork sub-watershed and Coal River sub-basin.

As currently authorized by DA Permit discharges of excess spoil to Pigeonroost Branch and Oldhouse Branch would bury those streams and their tributaries and the wildlife that live within them. Other wildlife would lose important headwater stream habitat on which they depend for all or part of their lifecycles.

In addition, the construction of valley fills, sedimentation ponds and other discharges into Pigeonroost Branch and Oldhouse Branch authorized by the DA Permit would likely have adverse impacts on downstream waters and wildlife living outside the footprint of the fill. These adverse impacts would be caused by the removal of functions performed by the buried resources and by transformation of the buried areas into sources that contribute contaminants to downstream waters. In addition, discharges to Pigeonroost Branch and Oldhouse Branch as currently authorized would likely contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life.

Based on these impacts, Region III has determined that discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal

River) would likely have unacceptable adverse effects on wildlife. Particularly in light of the high quality of the impacted resources, it is unlikely that the compensatory mitigation plan (CMP) for the project would offset these impacts. The proposed on-site created streams would be unlikely to replace the physical, chemical, and especially biological functions of Pigeonroost Branch and Oldhouse Branch.

There are other impacts that, while not forming the basis of the Recommended Determination, are of concern to the Region. To the extent that discharge of excess spoil outside jurisdictional waters, deforestation, and other activities associated with the project depend upon specification of Pigeonroost Branch and Oldhouse Branch as disposal sites, there are likely to be other adverse impacts from those dependent activities. In addition, impacts from the project will contribute to cumulative impacts from multiple surface mining activities in the Coal River sub-basin. There are also concerns regarding environmental justice.

II. Introduction

This document explains the basis for the EPA Region III recommendation to withdraw the specification of Pigeonroost Branch, Oldhouse Branch and their tributaries (all of which are waters of the United States) within Logan County, West Virginia as a disposal site for dredged or fill material in connection with construction of the Spruce No. 1 Surface Mine (Spruce No. 1 Mine or the project) as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River)(DA Permit or permit) (See Figure 3). While the DA Permit also authorizes construction of valley fills and other discharges to the Right Fork of Seng Camp Creek and its tributaries, Region III is not recommending withdrawal of specification of those waters in part because some of those discharges have already occurred.

EPA Region III is recommending that action be taken under section 404(c) of the Clean Water Act (CWA) because the Region believes that the discharges to Pigeonroost Branch and Oldhouse Branch and their tributaries for the purpose of constructing Spruce No. 1 Mine as currently authorized by the DA Permit would likely have unacceptable adverse effects on wildlife. Pigeonroost Branch and Oldhouse Branch and their tributaries are some of the last remaining streams within the Spruce Fork sub-watershed and the larger Coal River sub-basin that represent “least degraded” conditions. As such, they perform important hydrologic and biological functions, support diverse and productive biological communities, contribute to prevention of further degradation of downstream waters, and play an important role within the context of the overall Spruce Fork sub-watershed and Coal River sub-basin. The Spruce No. 1 Mine as currently authorized would bury virtually all of Oldhouse Branch and its tributaries and much of Pigeonroost Branch and its tributaries under excess spoil generated by mountaintop removal surface coal mining operations. Region III does not believe that the anticipated effects of the burial of all of Oldhouse Branch and much of Pigeonroost Branch will be offset by the proposed mitigation because it will not replace the chemical, physical and biological functions of the lost aquatic resources.

In addition, this recommendation considers the adverse impacts from mining-related activities, such as deforestation, that are associated with the discharge of excess spoil to areas outside the jurisdictional waters to the extent that these activities necessarily depend upon specification of Pigeonroost Branch and Oldhouse Branch for the construction of valley fills and sedimentation ponds. Moreover, the discharges associated with the Spruce No. 1 Mine will contribute to a cumulative adverse impact to the Spruce Fork sub-watershed, the Little Coal River watershed and the Coal River sub-basin. Finally, the Region continues to be concerned that potential issues related to disproportionate and high impact on the local population from construction of the Spruce No. 1 Mine have not been fully considered.

The next Section provides an overview of the Section 404(c) procedures, describes the Spruce No. 1 Mine as authorized, and summarizes the history of the project. Section IV describes the environmental characteristics of the project area, specifically Pigeonroost Branch and Oldhouse Branch, and the overall Coal River sub-basin. Section V examines the anticipated impacts from the Spruce No. 1 Mine as currently authorized. Consistent with Section 404(c), this discussion will focus on impacts to wildlife. Section VI will discuss other considerations, including impacts from activities associated with the Spruce No. 1 Mine that do not include direct discharges of dredged and/or fill material to jurisdictional waters but which may depend upon authorization of such discharges, and that are likely to cause direct and cumulative impacts to the environment and to local communities. Section VII describes EPA Region III's conclusions and recommendations.

III. Background

A. Section 404(c) Procedures

The CWA, 33 U.S.C. §§ 1251 et seq., prohibits the discharge of pollutants, including dredged or fill material, into waters of the United States (including wetlands) except in compliance with, among other provisions, Section 404 of the CWA, 33 U.S.C. § 1344. Section 404 authorizes the Secretary of the Army (Secretary), acting through the Chief of Engineers, to authorize the discharge of dredged or fill material at specified disposal sites. This authorization is conducted, in part, through the application of environmental guidelines developed by EPA, in conjunction with the Secretary, under section 404(b) of the CWA, 33 U.S.C. § 1344(b) (Section 404(b)(1) Guidelines). Section 404(c) of the CWA, 33 U.S.C. § 1344(c), authorizes the EPA to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site. EPA is authorized to restrict or deny the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever it determines, after notice and opportunity for public hearing, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

The procedures for implementation of Section 404(c) are set forth in 40 CFR Part 231. Under those procedures, if the Regional Administrator has reason to believe that use of a site for the discharge of dredged or fill material may have an unacceptable adverse effect

on one or more of the aforementioned resources, he may initiate the section 404(c) process by notifying the U.S. Army Corps of Engineers (Corps) and the applicant (and/or project proponent) that he intends to issue a Proposed Determination. Each of those parties then has fifteen days to demonstrate to the satisfaction of the Regional Administrator that no unacceptable adverse effects will occur, or that corrective action to prevent an unacceptable adverse effect will be taken. If no such information is provided to the Regional Administrator, or if the Regional Administrator is not satisfied that no unacceptable adverse effect will occur, the Regional Administrator will publish a notice in the Federal Register of his Proposed Determination, soliciting public comment and offering an opportunity for a public hearing.

Following the public hearing and the close of the comment period, the Regional Administrator will decide whether to withdraw the Proposed Determination or prepare a Recommended Determination. A decision to withdraw may be reviewed at the discretion of the Assistant Administrator for Water at EPA Headquarters. If the Regional Administrator prepares a Recommended Determination, he then forwards it and the administrative record compiled in the Regional Office to the Assistant Administrator for Water at EPA Headquarters. The Assistant Administrator makes the Final Determination affirming, modifying, or rescinding the Recommended Determination.

This document represents the third step in the process and explains the basis for EPA Region III's Recommended Determination.

B. Project Description

The Spruce No. 1 Mine as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River), is one of the largest mountaintop mining projects ever authorized in West Virginia. As currently authorized, it will disturb approximately 2,278 acres (about 3.5 square miles) and bury approximately 7.48 miles of streams. By way of comparison, the project area would take up a sizeable portion of the downtown area of Pittsburgh, PA (Figure 1).

**Spruce Mine No. 1 Permitted Boundary
Superimposed Over the City of Pittsburgh, PA**



Author: D. Evans, EPA R3 EAID

September, 2010

Figure 1 Spruce No. 1 Mine compared to downtown Pittsburgh, PA.

The project as authorized is located in the East District of Logan County, West Virginia at Latitude 38°52'39" and Longitude 81°47'52" depicted on the United States Geological Survey 7.5-minute Clothier and Amherstdale Quadrangles (Figure 2). The mine site is located approximately two miles northeast of Blair, in Logan County, West Virginia in the Central Appalachian ecoregion (Bryce, S.A., J.M. Omernik, and D.P. Larsen. 1999). <http://www.epa.gov/wed/pages/ecoregions.htm>

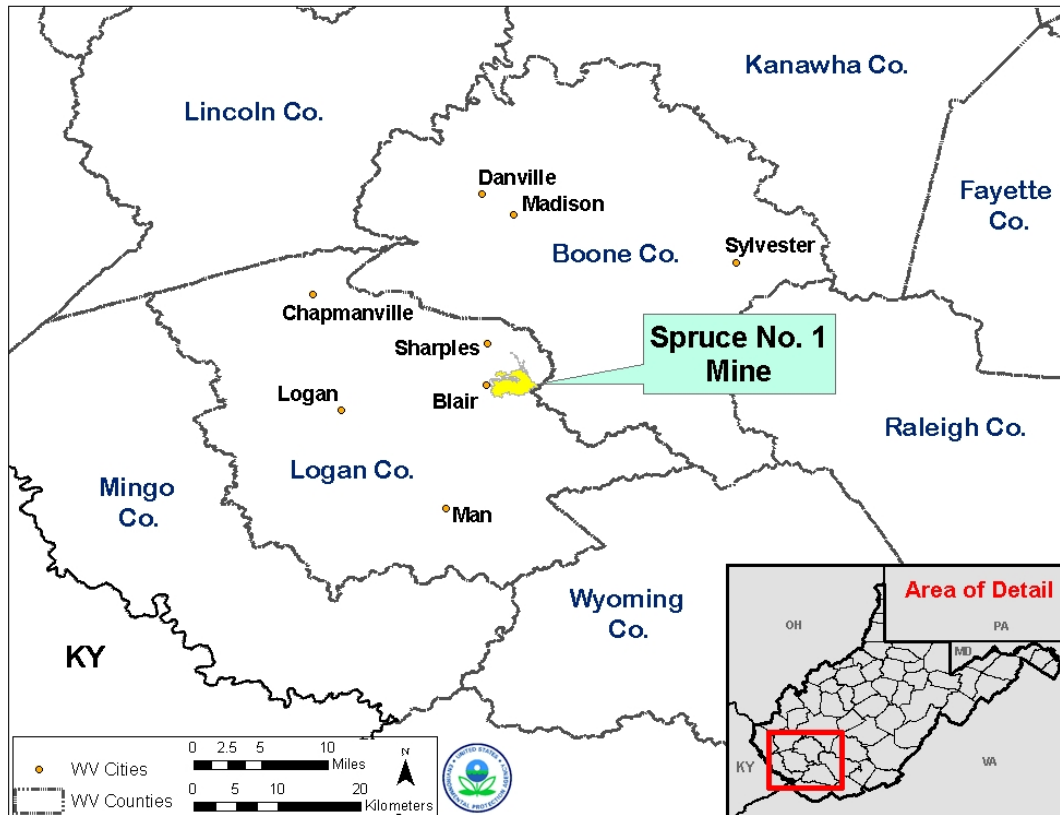


Figure 2: Spruce No. 1 mine location

According to the Environmental Impact Statement (EIS) prepared by the Corps in 2006 (Spruce No. 1 EIS) for the project, the Spruce No. 1 project is a mountaintop mining project targeting bituminous coal seams overlying and including the Middle Coalburg coal seam in the western portion of the project area. In the eastern portion of the project area, mountaintop mining would be limited to those seams including and overlying the Upper Stockton seam, with contour mining in conjunction with auger and/or highwall/thin-seam mining utilized to recover the Middle Coalburg seam.

As the phrase suggests, "mountaintop mining" involves removing the top of a mountain to recover coal seams contained within the mountain. Explosives are used to break apart the mountain's bedrock and earth-moving equipment is used to remove the excess rock, soil and debris (called "spoil") that formerly had composed the portions of the mountain above and immediately below the coal seam. The fractured material is larger in volume

than when it was intact, fused bedrock within the mountain. The amount of spoil that may be placed back on the mined area is also limited due to stability concerns. Hence mountaintop mining generates large quantities of "excess spoil" that cannot be placed back in the mined area. The "spoil" is then deposited in valleys, thereby burying streams that flow through those valleys.

The Spruce No. 1 EIS describes the project impacts as a disturbance of a total of 2,278 acres to recover seventy-five percent (75%) of the coal reserve targeted for extraction within the project area during fifteen (15) phases. The mining process would remove 400 to 450 vertical feet from the height of the mountain, about 501 million cubic yards of overburden material. Nearly 391 million cubic yards of spoil would be placed within the mined area (i.e., back on the mountain) and the remaining 110 million cubic yards of excess spoil would be placed in six valley fills, burying all or portions of the Right Fork of Seng Camp Creek, Pigeonroost Branch, and Oldhouse Branch and their tributaries (hereafter, references to Seng Camp Creek, Pigeonroost Branch, and Oldhouse Branch also include all tributaries to those waters that would be impacted by the project as authorized). Specifically, the DA Permit authorizes construction of Valley Fills 1A and 1B in Seng Camp Creek; Valley Fills 2A, 2B, and 3 in Pigeonroost Branch; and Valley Fill 4 in Oldhouse Branch, and numerous sedimentation ponds, mined-through areas and other fills in waters of the U.S (Figure 3). A detailed discussion of Spruce No. 1 project can be found in the Spruce No. 1 EIS on pages 2-35 through 2-61.

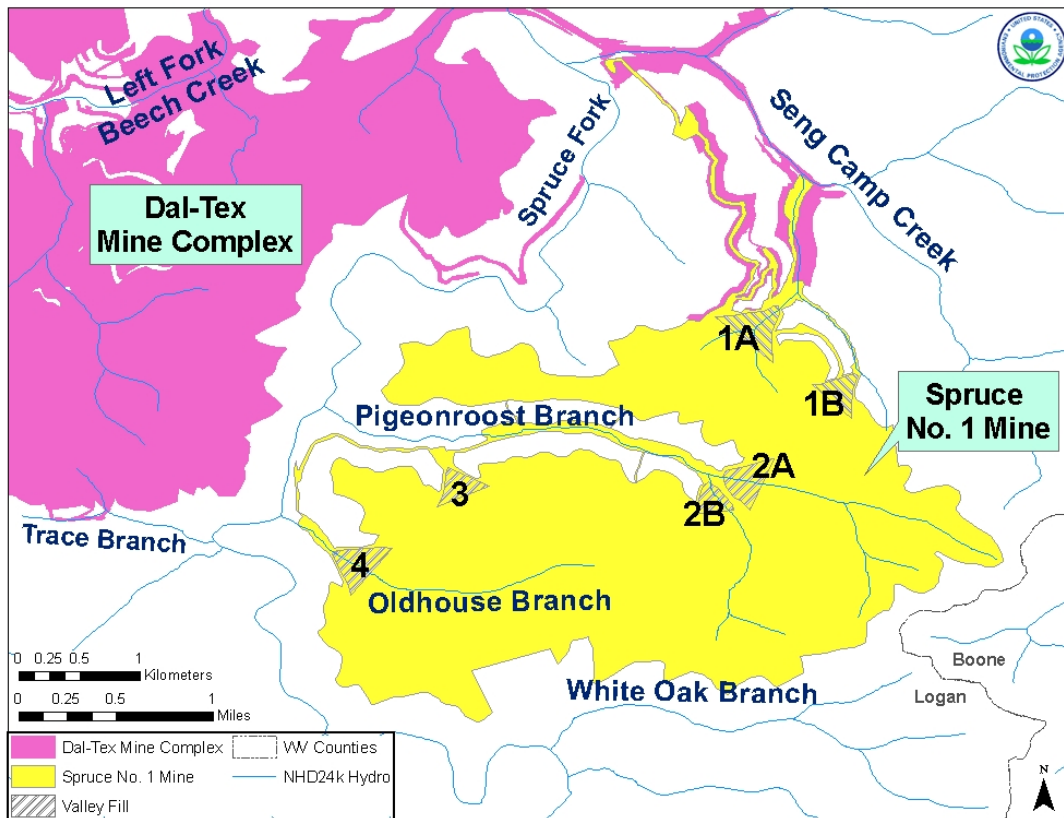


Figure 3. Spruce No. 1 Mine and associated valleyfills.

The Spruce No.1 Mine Surface Mining Control and Reclamation Act (SMCRA) Permit S-5013-97, Incidental Boundary Revision (IBR4, Modification 11) describes impacts from the project as including placement of dredged and fill material into approximately:

- 0.12 acre of emergent wetlands
- 10,630 linear feet (1.83 acres) of ephemeral stream channels (all permanent),
- 28,698 linear feet (6.12 acres) of intermittent stream channels
 - (26,184 linear feet [5.77 acres] permanent)
 - 2,514 linear feet [0.35 acre] temporary)
- 165 linear feet (0.034 acre) of perennial stream channel (all temporary),

While Region III is providing the foregoing summary from the SMCRA Permit S-5013-97 IBR for descriptive purposes, as set forth in more detail in Section V.C.2. below, Region III believes that the description provided in the Spruce No. 1 SMCRA Permit and in the Spruce No. 1 EIS incorrectly characterizes stream resources that will be impacted, as described further below.

The project as authorized also includes compensatory mitigation to offset adverse project impacts. EPA's concerns with the November 2006 compensatory mitigation plan (CMP) submitted by the permittee will be described in Section V.C.

C. Project History

This project has a lengthy and complex regulatory history. The Spruce No. 1 Mine was originally advertised as operated by Hobet Mining Inc., a subsidiary of Arch Coal, Inc.¹ The project as originally proposed in 1998, was larger than the currently authorized project and would have directly impacted a total footprint area of 3,113 acres and 57,755 linear feet (more than ten miles) of stream (not including indirect impacts to remaining downstream waters). At that time, the Corps tendered and ultimately withdrew a nationwide permit for the project, and the permittee, Mingo Logan, advised the Corps it would submit an individual permit application. An Environmental Impact Statement was prepared for the Spruce No. 1 project by the Army Corps of Engineers Huntington District pursuant to the National Environmental Policy Act, 42 U.S.C. 4332(C). The original project application also launched events that led to the Interagency Mountaintop Mining/Valley Fills in Appalachia Programmatic Environmental Impact Statement which was finalized in October 2005 (PEIS). The PEIS is available at www.epa.gov/Region3/mtntop/eis2005.htm.

An initial 2002 Spruce No. 1 Draft Environmental Impact Statement (EIS) considered a proposed project that was similar in scope and size to the original project described above. Region III's review of the 2002 Draft Environmental Impact Statement found gaps in the analyses of the mine and related adverse environmental impacts. Region III was particularly concerned by the lack of information regarding the nature and extent of impacts to the high quality streams that would be buried under valley fills, and recommended additional evaluation to support the analysis of less environmentally damaging alternatives. EPA Region III, in a letter dated August 12, 2002, indicated the EIS contained inadequate information for public review and for decision-makers.

In 2006, a revised Spruce No. 1 Draft EIS was prepared. At that time, the project was reconfigured to reduce impacts. The Mingo Logan, revised the mine plan to eliminate construction of a valley fill in White Oak Branch, a high quality stream (see Section IV.A. below) and the project area was reduced from 3,113 to 2,278 acres with direct stream impacts reduced to 7.48 miles.

In our June 16, 2006, comment letter on the 2006 Draft EIS, EPA Region III recognized that impacts from the mine had been reduced and the quality of EIS information had improved. However, the letter also noted that EPA had remaining environmental concerns associated with the Spruce No. 1 Mine, including potential adverse impacts to water quality (specifically, the potential to discharge selenium and the known correlation between similar mining operations and degradation of downstream aquatic communities), uncertainties regarding the proposed mitigation, need for additional analysis of potential environmental justice issues, and lack of study related to the cumulative impact of multiple mining operations within the Little Coal River watershed. EPA continued to

¹ Effective December 31, 2005, Arch Coal, Inc. transferred Spruce No. 1 Mine holdings and responsibilities to its Mingo Logan Coal Company (Mingo Logan) subsidiary.

stress its belief that corrective measures should be required to reduce environmental impacts and that other identified information, data, and analyses should be included in the final EIS.

Concerns regarding the Spruce No. 1 project were also raised by the U.S. Fish and Wildlife Service (USFWS), Ecological Services West Virginia Field Office in a letter dated May 30, 2006 from the Department of Interior, Philadelphia to the Huntington District Army Corps of Engineers. In that letter, the USFWS expressed concerns over the permittee's compensatory mitigation plan. The USFWS stated there was inadequate compensatory mitigation for the project because the assessment methodology used by the permittee to evaluate stream impacts considered only the physical characteristics of the impacted streams, without considering the equally important biological or chemical characteristics. The USFWS expressed concern the project would impact healthy, biologically functional streams and the mitigation included erosion control structures designed to convey water that would not replace the streams' lost ecological services.

The Corps issued the Spruce No. 1 Final EIS on September 22, 2006. On October 23, 2006, EPA commented on the Final EIS, noting that many of EPA's comments had not been adequately addressed. In a letter dated November 30, 2006, EPA offered its assistance to the Corps in developing a stream functional assessment protocol and willingness to work with Mingo Logan through EPA's Conflict Prevention and Resolution Center to develop a cumulative impact assessment and watershed restoration plan for the Little Coal River watershed.

Despite EPA and USFWS concerns on January 22, 2007, the Corps issued a Clean Water Act § 404 Permit (DA Permit No. 199800436-3 (Section 10: Coal River)) to Mingo Logan for the Spruce No. 1 Mine. That permit specified the Right Fork of Seng Camp Creek, Pigeonroost Branch and its tributaries, and Oldhouse Branch and its tributaries as disposal sites for the discharge of dredged and/or fill material from the Spruce No. 1 Mine.

On January 30, 2007, a number of environmental groups filed a complaint against the Corps in federal district court challenging its decision to issue the permit. That litigation was stayed for a period of time pending the U.S. Court of Appeals for the Fourth Circuit's decision in *Ohio Valley Environmental Coalition v. Aracoma Coal Co.*, 556 F.3d 177 (4th Cir. 2009). Following that decision, the litigation related to the Spruce No. 1 permit was reactivated. The litigation was then stayed again until October 22, 2010 following Region III's publication of its Proposed Determination on April 2, 2010.

In early 2007, Mingo Logan commenced limited operations at Spruce No. 1 pursuant to their DA Permit No. 199800436-3 (Section 10: Coal River) subject to an agreement with the environmental groups who are plaintiffs in the litigation. Pursuant to that agreement, Mingo Logan has been operating in a portion of the project in the Seng Camp Creek drainage area, including construction of one valley fill (valley fill 1A). Under the agreement, Mingo Logan must give plaintiffs 20 days notice before expanding operations

beyond the area subject to the agreement, and has done so once without objection from the plaintiffs. Mingo Logan's operations in the Seng Camp Creek watershed have generated data related to impacts from the project as constructed, including discharge monitoring reports submitted to the West Virginia Department of Environmental Protection (WVDEP). These data have been reviewed by Region III.

While the litigation was pending, the scientific literature began to reflect a growing scientific consensus of the importance of headwater streams, a growing concern about the adverse effects of mountaintop removal mining, and concern that impacted streams cannot easily be replaced. Many of these studies are cited in this Recommended Determination. On June 11, 2009, EPA, the Department of the Army, and the Department of the Interior entered into a *Memorandum of Understanding Implementing the Interagency Action Plan on Appalachian Surface Coal Mining*, in which the agencies agreed to take steps to reduce the harmful environmental consequences of Appalachian surface coal mining. On April 1, 2010, the U.S. Environmental Protection Agency's Office of Research and Development made available for public comment two reports titled: *The Effects of Mountaintop Mines and Valley Fills on Aquatic Ecosystems of the Central Appalachian Coalfields* and *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*. On the same day, EPA also published interim guidance titled: *Guidance on Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order*.²

On September 3, 2009, Region III requested the Corps suspend, modify or revoke DA Permit No. 199800436-3 (Section 10: Coal River) for discharges associated with the Spruce No. 1 Mine. On September 30, 2009, the Corps of Engineers stated that it would not reconsider the permit authorization. As a result, Region III initiated the Clean Water Act Section 404(c) process on October 16, 2009. Region III communicated with representatives of Mingo Logan and the Corps both in person and by telephone and electronic mail on several occasions to determine whether corrective action would be taken to address Region III's concerns. On April 2, 2010, Region III published in the Federal Register a Proposed Determination to withdraw specification of Pigeonroost Branch and Oldhouse Branch pursuant to CWA section 404(c). Region III solicited public comments on the Proposed Determination and held a public hearing in Charleston, West Virginia on May 18, 2010. Region III received over 50,000 comments on the Proposed Determination. Of these approximately 70% of comment letters submitted to the docket generally supported EPA's Proposed Determination while 65% of public hearing participants generally opposed EPA's Proposed Determination.

² Issuance of this guidance document is mentioned here solely for purposes of describing recent events related to EPA's understanding of impacts from Appalachian surface coal mine activities. The guidance provides a framework for EPA review of certain proposed surface coal mining applications. This Recommended Determination is based upon Region III's review of scientific and other information regarding the likely effects from the discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal River). Region III did not rely upon the April 1 Guidance in making its Recommended Determination.

In addition to its DA Permit No. 199800436-3 (Section 10: Coal River), the project received authorizations from the WVDEP, including authorization pursuant to the State's surface mining program approved under the Surface Mining Control and Reclamation Act of 1977 (SMCRA), 30 U.S.C. 1201-1328 (SMCRA permit), and a National Pollutant Discharge Elimination System (NPDES) permit for discharges of pollutants pursuant to Section 402 of the Clean Water Act, 33 U.S.C. 1342. WVDEP also issued a Clean Water Act Section 401 water quality certification.

IV. Characteristics and Functions of the Impacted Resources³

The resources that will be impacted by the Spruce No. 1 Mine include Central Appalachian headwater stream ecosystems in Pigeonroost Branch and Oldhouse Branch. Those waters have surface connection and flow to Spruce Fork, which in turn flows to the Little Coal River, and the Coal River. Because of the connectivity between headwater systems and downstream waters, Spruce Fork, the Little Coal River and the Coal River also would be likely to be impacted by discharges to Pigeonroost Branch and Oldhouse Branch. Accordingly, the characteristics and functions of the resources that will be impacted by discharges of fill material associated with the Spruce No. 1 Mine are best viewed from the perspective of the ecologic functions performed by Appalachian headwater stream ecosystems and within the context of the larger Spruce Fork sub-watershed and Coal River sub-basin.

Headwater streams play an important role in the ecosystem far beyond the mere transport of water from one point to another. In many ways, headwater streams are like the capillaries within the human circulatory system. Headwater streams form the largest network of waterbodies within the ecosystem and, as the early stages of the river continuum, provide the most basic and fundamental building blocks to the remainder of the aquatic and human environment. Appalachian headwaters provide habitat for wildlife. They also are a locus of significant interface between the river system and the terrestrial environment. Appalachian headwater streams and their wildlife inhabitants convert organic matter from the surrounding landscape (such as leaf litter) and transform it into nutrients and energy that can be transported and consumed by downstream

³ Region III derives its understanding of the potentially impacted resources and the predicted impacts of the project from several sources. The Draft (June 2003) and Final (October 2005) Interagency Mountaintop Mining/Valley Fills in Appalachia Programmatic EIS (PEIS) represent an important inter-agency effort designed to inform more environmentally sound decision-making for future permitting of mountaintop mining/valley fills. It had a geographic focus of 12 million acres encompassing most of eastern Kentucky, southern West Virginia, western Virginia, and scattered areas of eastern Tennessee, and included the Spruce No. 1 project area and the Coal River subbasin. EPA also consulted information gathered by the WVDEP, including an assessment of the Coal River sub-basin conducted in 1997, data collected to support the 2006 Coal River sub-basin total maximum daily load (TMDL), and WVDEP and nationally available GIS data. EPA also reviewed the 2006 Spruce No.1 EIS, and other sources of data including studies conducted by EPA scientists and discharge monitoring reports generated by Mingo Logan. In addition, EPA consulted a wide range of peer reviewed studies and literature. EPA Region III also communicated with the US Fish and Wildlife Service Elkins Field Office on impacts to fish and wildlife resources in the project area. Appendices to this Recommended Determination (RD) contain more detailed specific data, analysis and an index of references.

ecosystems. They also play an important role in storing, retaining and transporting nutrients, organic matter, and sediment. In addition they perform hydrologic functions related to downstream flow regimes, moderating flow rate and temperature. "Value of Headwater Streams: Results of a Workshop" from PEIS on MTM/VF (EPA 2003; <http://www.epa.gov/region03/mtntop/pdf/appendices/d/value-of-headwater-streams/headwater.pdf>); Fischenich, J.C. (2006), *Functional objectives for stream restoration*. EMRRP Technical Notes Collection (ERDC TN-eMRRP-SR-52 Vicksburg).

As authorized, the Spruce No. 1 Mine would bury under valley fills or impact through construction of sedimentation ponds substantially all of Oldhouse Branch and its tributaries and a substantial portion of Pigeonroost Branch and its tributaries. Oldhouse Branch and Pigeonroost Branch support ecosystems and conditions consistent with "least degraded" conditions in the Coal River sub-basin. As such, they are valuable in and of themselves and for the functions they perform within the context of the Spruce Fork sub-watershed and the Coal River sub-basin.

A. Watershed and Stream Conditions

1. Pigeonroost Branch and Oldhouse Branch

The stream systems that are the subject of this Recommended Determination, Pigeonroost Branch and Oldhouse Branch, are healthy stream systems supporting diverse aquatic communities as measured by their benthic macroinvertebrate populations.

In a body of water, benthic macroinvertebrates are the bottom-dwelling (benthic) organisms that are large enough to be seen without the aid of microscopes (macro) and do not have backbones (invertebrate). Freshwater macroinvertebrates, such as mayflies and stoneflies, serve as indicators of ecosystem health, and play a vital role in food webs and in the transfer of energy in river systems. These organisms convert plant material into fats and proteins, food sources critical for maintaining healthy fish and amphibian populations, as well as for foraging terrestrial vertebrates such as birds, bats, reptiles, and small mammals. In this ecological niche, macroinvertebrates deliver energy and nutrients along the stream continuum. They also clean excess living and nonliving organic material from freshwater systems, a service that contributes to the overall quality of the watershed. Because of these functions, macroinvertebrates are essential organisms within the food web, supporting the health of the entire aquatic ecosystem.

Macroinvertebrates are also good indicators of watershed health and are used by West Virginia and other states in the Mid-Atlantic region and across the U.S. to assess the quality of their waters. They are good indicators because they live in the water for all or most of their life cycle. Macroinvertebrates can be found in all streams, are relatively stationary and cannot escape pollution. They also differ in their tolerance to the amount and types of pollution. Macroinvertebrate communities integrate the effects of stressors over time and some taxa (i.e., taxonomic category or group such as phylum, class, family, genus, or species) are considered pollution-tolerant and will survive in degraded conditions. Other taxa are pollutant-intolerant and will die when exposed to certain levels

of pollution. Thus, the composition of tolerant and intolerant (i.e., sensitive) communities informs scientists about the quality of the water.

In a healthy stream, one would expect to find a high diversity of benthic macroinvertebrate taxa and a large number of different taxa including taxa that are more sensitive to stressors. Using the mayfly (Insecta: Ephemeroptera) as an example, some genera of mayfly are more sensitive than others. The presence of a large number of individuals from the more sensitive mayfly genera indicates good water quality conditions. Mayflies in particular have long been recognized as important indicators of stream ecosystem health. Mayflies are a very important part of the native organisms in Appalachian headwater streams and they routinely make up between 30%-50% of the insect assemblages in certain seasons. Numerous studies demonstrate that mayfly community structure reflects the chemical and physical environment of watercourses (e.g., Barber-James et al. 2008; Bauernfeind & Moog 2000). See Appendix 1 for more detail on macroinvertebrates as indicators of water quality.

According to Morse et al. (1997), the Central Appalachian ecoregion has many endemic and rare species of benthic macroinvertebrates in the orders Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies).⁴ This diversity and unique assemblage has been attributed to the unique geological, climatic, and hydrological characteristics of this region. The Spruce No. 1 Mine project area has been found to be very rich in macroinvertebrates species. Data from the PEIS, the Spruce No. 1 EIS and from the WVDEP monitoring database indicate that high macroinvertebrate diversity exists in Pigeonroost Branch and Oldhouse Branch. Data from EPA, WVDEP, and the applicant's consultants (Sturm Env. Services, BMI, Inc.) reveal that collectively, Pigeonroost Branch, Seng Camp Creek, and Oldhouse Branch contain a high number of mayfly taxa and individuals. A total of 21 genera (Table 2) have been identified from these three headwater streams indicating these systems offer high water quality and optimal habitat.

Macroinvertebrate data collected in Oldhouse Branch indicates that the quality of the macroinvertebrate community in Oldhouse Branch is in the top 5% of all streams in the Central Appalachia ecoregion. In 1999-2000, EPA collected eighty-five (85) macroinvertebrate genera in riffle complexes⁵ of Pigeonroost Branch and Oldhouse Branch.

With respect to mayfly taxa, as many as nine genera have been collected in Oldhouse Branch in any one season-specific sample, with an average of seven genera across multiple samples. This observation ranks in the 95th percentile of all samples taken in the Central Appalachian ecoregion (937 samples) by WVDEP. Out of more than 4000

⁴ The orders Ephemeroptera, Plecoptera and Trichoptera (EPT taxa) contain pollution sensitive groups and are used by natural resource agencies such as West Virginia Department of Environmental Protection to assess watershed health.

⁵Riffle and pool complexes are considered special aquatic sites under 40 CFR 230.1(d) and as such the degradation or destruction of these sites is considered to be among the most severe environmental impacts covered by the 404(b)(1) Guidelines.

samples collected statewide in West Virginia, Oldhouse Branch ranks in the 90th percentile. Pigeonroost Branch contained eight mayfly genera in a season-specific sample, ranking it among the 90th percentile in the Central Appalachians and 83rd percentile statewide from among more than 4000 single-sample observations.

The data are similar for stoneflies. Data compiled from EPA, WVDEP, and the applicant's consulting firms show that Oldhouse, Pigeonroost, and Seng Camp collectively yielded 16 genera of stoneflies (Table 3). Oldhouse and Pigeonroost both had 11 genera. A single collection in Oldhouse by EPA (Spring 2000) had 9 genera of stoneflies which ranks greater than the 98th percentile of all Central Appalachian streams sampled by WVDEP (937 samples). This means that only 2% of stream samples in this ecoregion had more stonefly taxa than Oldhouse within a single sampling event. Pigeonroost Branch had as many as six stonefly genera in any one season-specific sample, ranking it at the 83rd percentile among 937 Central Appalachian streams, and 72nd percentile statewide.

Water chemistry data for Pigeonroost Branch and Oldhouse Branch also reflect healthy streams with little human disturbance. Data from WVDEP indicate that average conductivity values for the unmined streams on the Spruce No. 1 project area are very low. Based on the WVDEP dataset (2002-2003), Oldhouse Branch had an average conductivity level of 90 $\mu\text{S}/\text{cm}$, which is below that of White Oak Branch, a nearby reference-quality stream, which had an average conductivity level of 118 $\mu\text{S}/\text{cm}$. Conductivity levels described above in Oldhouse Branch and White Oak Branch indicate excellent water quality, comparable to reference quality streams for this ecoregion. Sulfate concentrations in these streams are also low (28 mg/l in Oldhouse and 24 mg/l in White Oak Branch). Pigeonroost Branch had a conductivity level of 199 $\mu\text{S}/\text{cm}$ and sulfate level of 99 mg/l. The slightly elevated average conductivity and sulfate values reflect the relatively small amount of historical mining landuse in the Pigeonroost watershed.

During the December 2008 to March 2010 time frame, discharge monitoring reports submitted by the permittee indicate 15 of the 16 selenium measurements at both Pigeonroost Branch and Oldhouse Branch were below the detection limit of 0.6 $\mu\text{g}/\text{L}$. The single detection of selenium on Oldhouse Branch was 0.9 $\mu\text{g}/\text{L}$ during July 2009. The single detection of selenium on Pigeonroost Branch was 1.9 $\mu\text{g}/\text{L}$ during August 2009. These readings are far below West Virginia's numeric chronic water quality criterion for selenium of 5 $\mu\text{g}/\text{L}$. These levels are also significantly lower than levels demonstrated immediately downstream of adjacent mining operations, as described below.

2. The Spruce Fork Sub-watershed and the Coal River Sub-basin

The Spruce No. 1 mine is located within the larger Spruce Fork sub-watershed (12-digit hydrologic unit code (HUC) and the Coal River sub-basin (8-digit HUC) (Figure 4). Pigeonroost Branch and Oldhouse Branch flow to Spruce Fork, which in turn flows into the Little Coal River and then into the Coal River. Oldhouse Branch and Pigeonroost

Branch are important within the context of the larger Coal River sub-basin and Spruce Fork sub-watershed because they represent some of the few stream systems supporting least-degraded conditions within those watersheds.

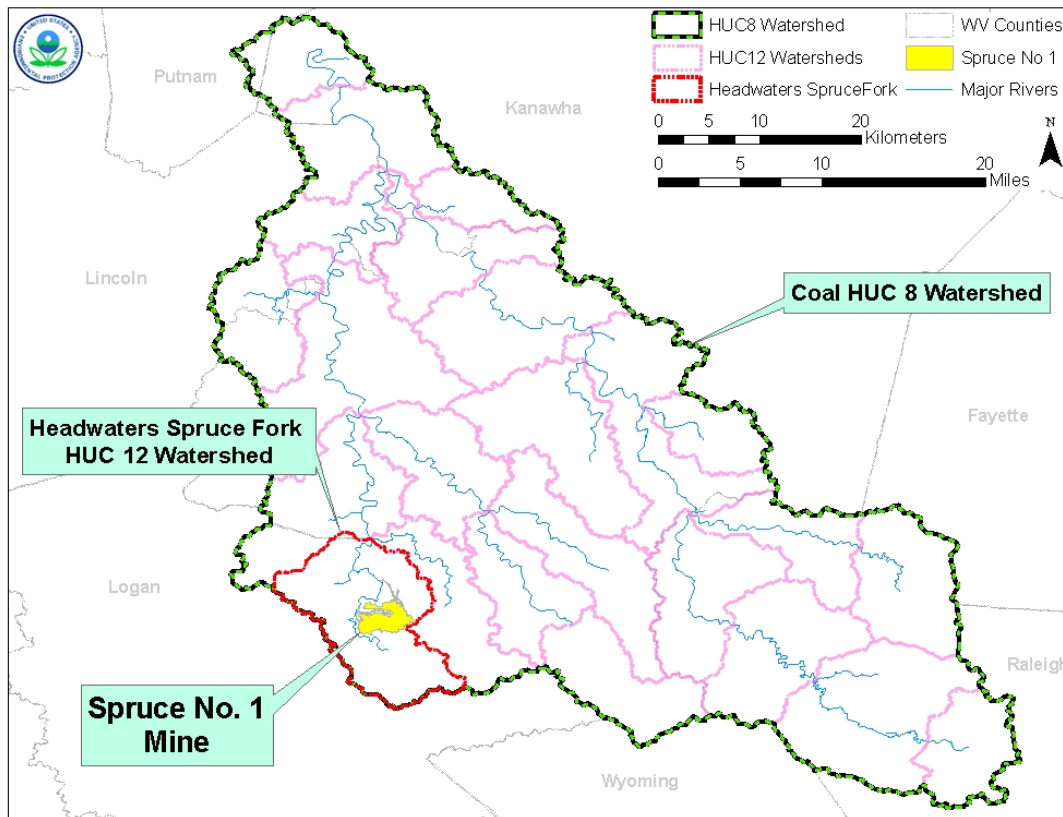


Figure 4 Spruce Fork sub-watershed (12-digit hydrologic unit code (HUC)) and the Coal River sub-basin (8-digit HUC)

The Coal River sub-basin encompasses nearly 891 square miles within West Virginia. Major tributaries within the Coal River sub-basin include Marsh Fork, Clear Fork, Pond Fork, Spruce Fork, and Little Coal River. Marsh Fork and Clear Fork join at Whitesville, WV to form the Big Coal River. Pond Fork and Spruce Fork join at Madison, WV to form the Little Coal River. Little Coal and Big Coal Rivers join to form the Coal River at Forks of the Coal, WV. The Coal River sub-basin has been impacted by past and present surface mining. Based upon the National Land Cover Database (NLCD) change product for 1992-2001 and WVDEP's Geographic Information System (GIS) mining files, more than 257 past and present surface mining permits have been issued in the Coal River sub-basin, which collectively occupy more than 13% of the land area. Some sub-watersheds in the Coal River sub-basin have more than 55% of the land occupied by surface mine permits.

The Spruce Fork sub-watershed, where the project is located, is a fourth order tributary that combines with Pond Fork to form the Little Coal River, which in turn flows into the Coal River. Spruce Fork is located in the southwestern portion of the Coal River watershed and drains approximately 126.4 square miles. The dominant landuse in the

Spruce Fork watershed is forest. Other important landuse types include urban/residential and barren/mining land. The Spruce Fork sub-watershed has been impacted by past and present surface mining activity. According to WVDEP Division of Mining and Reclamation permit maps, within the Headwaters Spruce Fork sub-watershed, where Spruce No. 1 is to be located, there are more than 34 past and present surface mine permits issued which collectively occupy more than 33% of the land area. Assuming full constructions of these projects in addition to known future surface mining permits, more than 40% of the land area of the sub-watershed will be affected.

In 1997, the WVDEP performed its first comprehensive ecological assessment of the Coal River sub-basin⁶. WVDEP assessed three major aspects of watershed health: water quality, habitat condition, and benthic macroinvertebrate community status. The subsequent report, *An Ecological Assessment of the Coal River Watershed* (1997), indicated that sediments, coal mining and inadequate sewage treatment were the major stressors on streams in this watershed. As a part of that assessment WVDEP stated:

High quality streams with minimal human disturbances provide significant and even irreplaceable wildlife habitat. They also provide a tremendous recreational resource. No sites in the Coal River Watershed met the minimum criteria for reference site status. This is the first of 32 watersheds studied in West Virginia that produced no potential reference sites. Researchers conducting the EPA study on mountaintop mining, alluded to previously, have found a few small streams within the watershed that may meet the reference site criteria. The Program has since adopted one stream, White Oak Branch, (KC-10-T-22), as a reference site. Since reference sites reflect least-degraded conditions, it is vital that the WVDEP do its part in fulfilling the mission of preserving the high quality of these rare and important streams. It is also important that the agency make a concerted effort to find the apparently few remaining streams within the watershed that have not been significantly impacted by human disturbances.

White Oak Branch, referenced above in WVDEP's 1997 study, flows to Spruce Fork immediately upstream of Oldhouse Branch and Pigeonroost Branch. As noted above, WVDEP has adopted White Oak Branch as a reference site. WVDEP defines reference conditions as those conditions that “describe the characteristics of waterbody segments least impaired by human activities and are used to define attainable biological and habitat conditions. Final selection of reference sites depends on a determination of minimal disturbance, which is derived from physico-chemical and habitat data collected during the assessment of the stream sites.” Reference sites are used to determine the score that represents the threshold between impaired and non-impaired sites.

Based on a comparison of their macroinvertebrate communities, Oldhouse Branch and Pigeonroost Branch are of comparable quality to White Oak Branch. Accordingly, Oldhouse Branch and Pigeonroost Branch reflect least-degraded conditions and represent

⁶ Report can be found at

http://www.dep.wv.gov/WWE/watershed/wqmonitoring/Documents/EcologicalAssessments/EcoAssess_Coal_1997.pdf

some of the few remaining streams within the Coal River sub-basin that have not been significantly adversely impacted by human disturbances.

Oldhouse Branch flows into Spruce Fork immediately downstream of White Oak Branch and exhibits similar healthy biological diversity and water quality (EPA data). Using the West Virginia Stream Condition Index (WVSCI), an assessment method developed for use in West Virginia to help evaluate the health of benthic macroinvertebrate communities at the family level in wadeable streams,⁷ both Oldhouse Branch and White Oak Branch scored comparably well, meaning that both were of similar quality and supporting similar aquatic communities.

Oldhouse Branch and White Oak Branch also score comparably well when the benthic macroinvertebrate community is considered at the more sensitive genus (as opposed to family) level. For instance, Oldhouse Branch shared 55 total genera (many of them pollution intolerant) with White Oak Branch (EPA data) indicating a diverse and healthy aquatic community in Oldhouse Branch similar to the high quality communities of White Oak Branch.

Pigeonroost Branch also shares many macroinvertebrate genera (many of them pollution intolerant) in common with the high quality community in White Oak Branch, indicating that the health of Pigeonroost Branch's aquatic community is similar. The WVSCI assessment of Pigeonroost indicates water quality is relatively good despite the presence of localized historic mining in the watershed. See Section IV.B.1. and Appendix 1 for more detail on macroinvertebrates at the Spruce No. 1 mine project site.

The relatively high quality of Oldhouse Branch and Pigeonroost Branch also can be demonstrated by comparison to other streams in the Spruce Fork sub-watershed that have been impacted by mining operations similar to the Spruce No. 1 Mine. Four such streams are directly northwest of the Spruce No. 1 project, on the west side of Spruce Fork, and in part, are impacted by the Mingo Logan Dal-Tex Mining Operation. Section V.B.2.a below compares the health of the relatively unimpacted macroinvertebrate communities in Pigeonroost Branch and Oldhouse Branch with the macroinvertebrate communities in streams elsewhere within the Spruce Fork sub-watershed that have been impacted by mining activity. By way of summary here, Oldhouse Branch and Pigeonroost Branch support a much healthier and more diverse assemblage of benthic macroinvertebrates than do the four comparison streams that are impacted by the Dal-Tex operation.

B. Wildlife

The ecoregion where the Spruce No. 1 project is located (Figure 5) has some of the greatest aquatic animal diversity of any area in North America, especially for species of amphibians, fishes, mollusks, aquatic insects, and crayfishes. Salamanders in particular reach their highest North American diversity in the Central Appalachian ecoregion.

⁷ For a more detailed discussion of WVSCI, see Section V.B.2.a.iii.

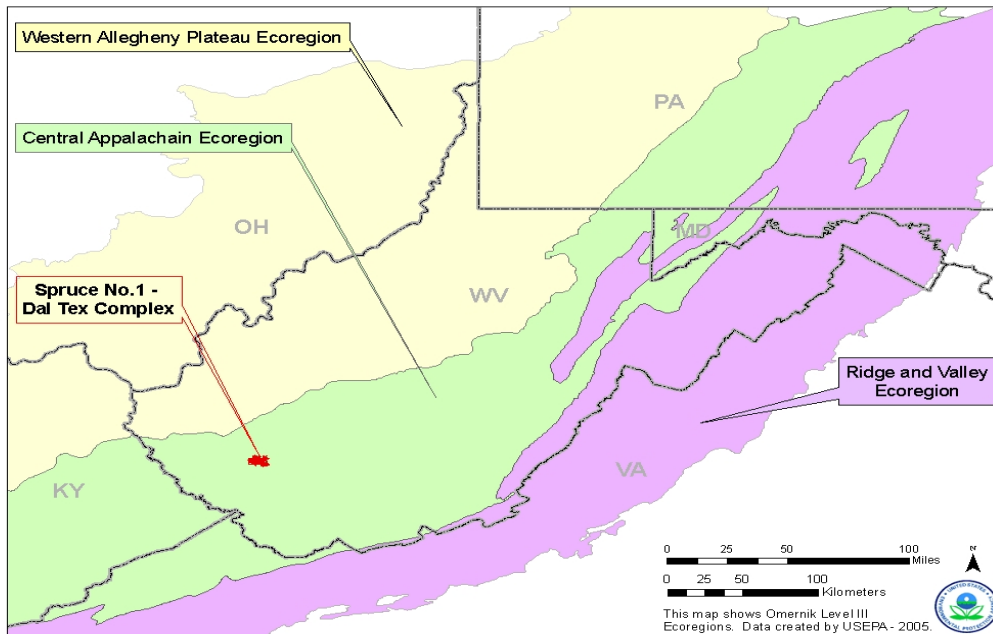


Figure 5 Central Appalachian Ecoregion

The ecoregion where the Spruce No. 1 project is located includes one of the most prominent biodiversity hot spots of rarity and richness identified by The Nature Conservancy (TNC) (Figure 6).

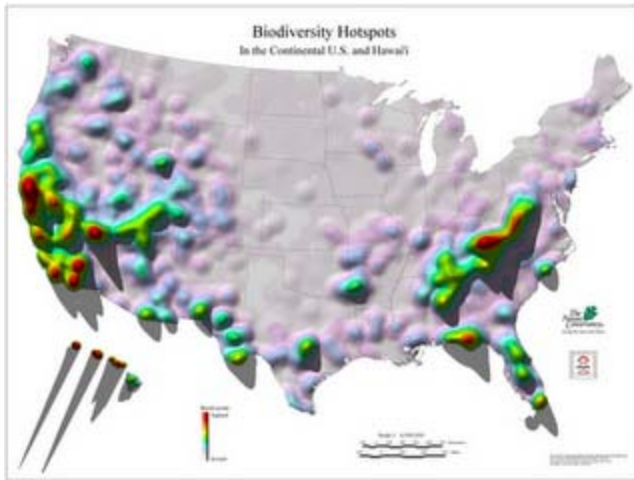


Figure 6: TNC Biodiversity Hotspots

Map adapted from Precious Heritage:
The Status of Biodiversity in the United States.
Data from State Natural Heritage Programs and their cooperators.
Map produced by TNC Eastern Conservation Science GIS, 5/19/00.
© The Nature Conservancy

<http://www.nature.org/wherewework/northamerica/states/westvirginia/science/>

Individual watersheds and peaks in the Appalachian chain, isolated for millions of years with benign environmental conditions, provided a perfect setting for the evolution of unique species of plants, invertebrates, salamanders, crayfishes, freshwater mussels, and fishes. These forests represent the center of the earth's salamander diversity. Not only are there numerous species, but salamanders also are incredibly abundant here, often accounting for the most vertebrate biomass in a given patch of forest (Stein et al, 2000). It has been documented that other specialized wildlife such as some neotropical migrant birds and forest amphibians rely on the natural headwater stream condition and adjacent forest types exhibited by Pigeonroost Branch and Oldhouse Branch for maintenance of their populations (Stein et al, 2000).

1. Invertebrates

As set forth above in Section IV.B.1. above, Pigeonroost Branch and Oldhouse Branch support diverse and healthy communities of benthic macroinvertebrates. In terms of its mayfly community, Oldhouse Branch ranks in the top 5% in the eco-region and the top 10% in the State. Oldhouse Branch's stonefly community ranks in the top 2% of the ecoregion. Pigeonroost Branch's mayfly community ranks among the top 10% in the co-region and the top 17 % in the State. Pigeonroost's stonefly community ranks in the top 17% in the eco-region and the top 28% third of the State.

As described above, benthic macroinvertebrates are the bottom-dwelling (benthic) organisms that are large enough to be seen without the aid of microscopes (macro), and are not equipped with backbones (invertebrate). Put simply, they are aquatic insects. In addition to serving as indicators of ecosystem health, freshwater macroinvertebrates, including mayflies and stoneflies, play a vital role in food webs and in the transfer of energy in river systems. These organisms essentially convert plant material into food sources (fats and proteins) essential for the maintenance of healthy fish and amphibian populations, and for foraging terrestrial vertebrates such as birds, bats, reptiles, and small mammals; serving as critical foodchain organisms, vital to the sustenance of healthy ecosystems. Because of their productivity and secondary position in the aquatic food chain, macroinvertebrates play a critical role in the delivery of energy and nutrients along the stream continuum. They also are instrumental in cleaning excess living and nonliving organic material from freshwater systems, a service that contributes to the overall quality of the watershed.

Macroinvertebrates are indigenous to central Appalachian streams and their naturally occurring communities are important components of stream ecosystems. Macroinvertebrates are recognized as wildlife by several organizations, including the US Fish and Wildlife Service (USFWS), USDA Forest Service, The Nature Conservancy, State Natural Heritage programs, and the West Virginia Department for Natural Resources (WVDNR). Currently, within the U.S., the USFWS lists 50 species of insects as endangered under the Endangered Species Act (ESA), and another 10 species as threatened under the ESA. Insects represent 10.4 percent of all currently-listed animals in the U.S. and 4.4 percent of all listed species, including plants (http://ecos.fws.gov/tess_public/pub/boxScore.jsp). Several dozen other insects are candidates for listing under the ESA, including the Sequatchie caddisfly (*Glyphopsyche sequatchie*), a trichopteran found in Tennessee.

The State of West Virginia also considers insects to be wildlife, and includes insects on its list of rare, threatened and endangered species. Many aquatic insects are listed, including: 12 species of stoneflies, two species of mayflies, and 73 species of dragonflies and damselflies (West Virginia Natural Heritage Program 2007). Scientists and environmental consultants who collect benthic macroinvertebrates in West Virginia must obtain a wildlife collection permit from WVDNR.

Mayflies are most popularly known among fly-fishermen, where anglers rely on the seasonal hatches of mayflies that coincide with catching trout and other game fish species. Not only do trout rely on mayflies and stoneflies, but a group of colorful benthic fishes known as Darters (Percidae) feed primarily on mayflies. A dietary study of small stream fishes in the Appalachian coalfields of Kentucky (Lotrich 1973) showed that gut contents of several darters contained mostly mayflies. Darters are an important part of the fish assemblage and many are hosts for mussel larvae. Several darter species inhabit Spruce Fork in the immediate vicinity of the project area. Table 1 identifies the mayfly genera that have been identified in the Spruce No. 1 mine permit area.

Table 1. Presence/absence of mayfly genera in the permit area.

Order	Family	Genus	Oldhouse	Pigeonroost	Seng Camp
Ephemeroptera	Ameletidae	<i>Ameletus</i>	X	X	
Ephemeroptera	Baetidae	<i>Acentrella</i>	X	X	
Ephemeroptera	Baetidae	<i>Baetis</i>	X	X	X
Ephemeroptera	Baetidae	<i>Diphetor</i>		X	
Ephemeroptera	Baetiscidae	<i>Baetisca</i>		X	X
Ephemeroptera	Caenidae	<i>Caenis</i>			X
Ephemeroptera	Ephemerellidae	<i>Attanella</i>		X	X
Ephemeroptera	Ephemerellidae	<i>Dannella</i>		X	X
Ephemeroptera	Ephemerellidae	<i>Drunella</i>	X	X	
Ephemeroptera	Ephemerellidae	<i>Ephemerella</i>	X	X	
Ephemeroptera	Ephemerellidae	<i>Eurylophella</i>	X	X	X
Ephemeroptera	Ephemeridae	<i>Ephemerella</i>	X	X	X
Ephemeroptera	Heptageniidae	<i>Cinygmula</i>	X	X	
Ephemeroptera	Heptageniidae	<i>Epeorus</i>	X	X	
Ephemeroptera	Heptageniidae	<i>Heptagenia</i>		X	
Ephemeroptera	Heptageniidae	<i>Maccaffertium</i>	X	X	X
Ephemeroptera	Heptageniidae	<i>Stenacron</i>	X		X
Ephemeroptera	Isonychiidae	<i>Isonychia</i>		X	X
Ephemeroptera	Leptophlebiidae	<i>Choroterpes</i>	X		
Ephemeroptera	Leptophlebiidae	<i>Paraleptophlebia</i>	X		X

Note: Siphonurus and Pseudocloeon reported by Sturm Env. are likely erroneous identifications. These genera have been excluded from this list.

Stoneflies (Plecoptera) also represent an important group of aquatic insects in the structure and functioning of stream ecosystems. Stoneflies also fill important trophic roles in stream ecosystems, as displayed by their detritivory (consumption of dead or decaying organic matter) and predatory functional feeding group designations. As with mayflies, stoneflies are valued and imitated by fly-fishermen and serve as an abundant food source for many salamanders and fishes. Stoneflies are primarily stenothermic, meaning they inhabit cool to cold waters which provide the higher dissolved oxygen concentrations required for their survival. Table 2 presents the stonefly genera identified in the Spruce No. 1 Mine area.

Table 2. Presence/absence of stonefly genera in the permit area.

Order	Family	Genus	Oldhouse	Pigeonroost	Seng Camp
Plecoptera	Capniidae	<i>Allocaenia</i>	X	X	X
Plecoptera	Chloroperlidae	<i>Alloperla</i>		X	
Plecoptera	Chloroperlidae	<i>Haploperla</i>	X		
Plecoptera	Chloroperlidae	<i>Sweltsa</i>	X		
Plecoptera	Leuctridae	<i>Leuctra</i>	X	X	X
Plecoptera	Nemouridae	<i>Amphinemura</i>	X	X	
Plecoptera	Nemouridae	<i>Ostrocerca</i>	X	X	
Plecoptera	Nemouridae	<i>Paranemoura</i>		X	
Plecoptera	Peltoperlidae	<i>Peltoperla</i>	X		X
Plecoptera	Perlidae	<i>Acroneuria</i>	X	X	X
Plecoptera	Perlidae	<i>Isoperla</i>	X		X
Plecoptera	Perlidae	<i>Remenis</i>		X	
Plecoptera	Perlidae	<i>Yugus</i>	X		
Plecoptera	Pteronarcyidae	<i>Pteronarcys</i>	X	X	X
Plecoptera	Taeniopterygidae	<i>Taenionema</i>		X	
Plecoptera	Taeniopterygidae	<i>Taeniopteryx</i>		X	X

Note: Podmosta, Paraleuctra, Megaleuctra, and Beloneuria reported by Sturm Env. are likely erroneous identifications. These genera been excluded from this list.

2. Salamanders

The ecoregion where the Spruce No. 1 project is located contains one of the richest salamander fauna in the world (Petranka 1998, Stein et al., 2000). Nearly ten percent of global salamander diversity is found within streams in the ecoregion (Green and Pauley, 1987). Salamanders are a diverse and unique form of Appalachian wildlife that depend on forested headwater habitat and decline or disappear from surface mined areas. Many species of salamanders are aquatic or semi-aquatic and utilize headwater streams at some point in their life histories. Most of the species found in the project area are water-dependent and belong to the family Plethodontidae, the lungless salamanders, which require high moisture retaining leaf-litter, dense shade, and cool flowing streams to survive and reproduce. Typically, salamanders occupy small, high-gradient headwater streams while fish occur farther downstream.

Salamanders are an important ecological component in the mesic (medium precipitation) forests of the ecoregion and are often the most abundant group of vertebrates in both biomass and number (Burton and Likens, 1975; Hairston, 1987). Ecologically, salamanders are intimately associated with forest ecosystems acting as predators of small invertebrates and serving as prey to larger predators (Pough et al., 1987). Some species of salamanders split their lives between forests and headwaters and depend on a close connection to move between the two (Petranka, 1998).

Moler and Franz (1987) cite the work of Burton and Likens (1975) and Gosz et al. (1978) in New Hampshire who suggest an important role for amphibians in energy cycling. Burton and Likens (1975) found that the biomass of salamanders was about double that of birds during the peak birding season and about equal to the biomass of small mammals. Gosz et al. (1978) found that salamanders and shrews were the most important vertebrates preying on the invertebrates of the forest floor. They estimated that birds consumed 6.5 times, and shrews 4.7 times, the amount of food energy consumed by the salamander community. However, because the warm-blooded birds and shrews expended 98% of their energy intake on metabolic maintenance compared to only 40% for the salamanders, salamanders contribute 4.6 (shrews) and 6.3 (birds) times as much biomass to the available prey base, making them an important component of the foodweb.

With respect to the immediate project area, stream-dwelling salamanders have been surveyed in White Oak Branch (USFWS, unpublished data, 2004). White Oak Branch had good numbers of Northern Dusky (9 adult, 7 larvae), Appalachian Seal (15 adult, 12 larvae), and Two Lined salamanders (1 adult and 15 larvae). These numbers represent densities in a 12 square meter plot that includes dry and wetted portions of the stream channel. Because Oldhouse Branch and Pigeonroost Branch are very close geographically and have similar features as White Oak Branch, salamander populations in Pigeonroost and Oldhouse Branch can be expected to be similar to those in White Oak Branch. Williams (2003) found mean densities within reference reaches of Pigeonroost, Bend Branch (another tributary of Spruce Fork), and Ash Fork (a tributary of Gauley River) at more than six salamanders per square meter. In the Williams' study, the majority of the total catch of salamanders was found in Pigeonroost.⁸ Using these numbers from White Oak Branch and Pigeonroost, EPA estimates aquatic salamanders are indeed abundant (~5-6 per square meter) along stream channels in Pigeonroost Branch and Oldhouse Branch.

⁸ Williams (2003) data from the WV MTM region also showed that while more individuals were found in the lower 1st-2nd order reaches, slightly more species (8 spp.) were actually found in the upper intermittent reaches.

3. Fish

Fish communities change with watershed size and respond to gradients of physical habitat and chemistry. The fish assemblages in Pigeonroost Branch and Oldhouse Branch are typical of headwater streams, containing only a few species. The fish assemblages in Spruce Fork are in relatively good condition. Spruce Fork is a locally important rock bass and smallmouth bass fishery. These fish assemblages are not representative of pristine conditions and it is likely that some of the more sensitive species may have been historically extirpated from past anthropogenic activities, including mining.

In an analysis of fish community data from Spruce Fork, Region III assessed the small streams immediately impacted by the Spruce No. 1 permit and three reaches of Spruce Fork: 1) Upstream of Seng Camp, 2) Seng Camp to Spruce Laurel, and 3) Downstream of Spruce Laurel. Other data analyzed included data collected for the Programmatic Environmental Impact Statement (PEIS) for Mountaintop Mining/Valley Fills. (see Stauffer and Ferreri, 2002 and Fulk et al. 2003); unpublished data included in the West Virginia Department of Natural Resources database (including USEPA, WVDNR, and consulting firm data); and data from Decota Consulting (consultants for Mingo Logan) supplied to the WVDNR collecting permit program. The data consisted of samples that were intended for community assessment and were judged to have sufficient numbers of individuals to render a fair assessment. Fish community data can be difficult to analyze and oftentimes the absence of species may be due to zoogeography (how they were distributed in response to past geological events) or due to stressors over time in the watershed. Some of these stressors may still be apparent and some may not.

The fish found in Pigeonroost Branch, Oldhouse Branch, and White Oak Branch are typical of small streams in the Coal River Basin. They do not indicate impairment, nor do they indicate reference conditions. EPA compared samples collected for the PEIS in 1999 and more recent data collected by Decota Consulting from 2008 and 2009. When sampled for the PEIS, Pigeonroost Branch had been affected by drought and only blacknose dace and creek chubs were present. These species are tolerant of disturbance and are headwater species adapted to drought. White Oak Branch also was sampled for the PEIS at the same time. It too was drought-affected and contained only blacknose dace at the time of the PEIS sampling in 1999. No samples were collected in Oldhouse Branch for the PEIS.

More recent data indicates that Pigeonroost Branch also has a population of mottled sculpin, and at times smallmouth bass and stonerollers. More recent data from White Oak Branch indicates that creek chubs are also present in good numbers and mottled sculpin are rare (only 1 individual captured). Data from Oldhouse Branch indicates that blacknose dace and creekchubs are the only species present.

For the PEIS, Fulk et al. (2003) used the Mid-Atlantic Highlands (MAHA) Index of Biotic Integrity (IBI - a multi-metric index used to assess biotic health), with some minor modification, to assess the impacts of MTM/VF to fish assemblages. Using this same

index, the assemblage upstream of Seng Camp Creek ranged from fair to excellent condition.

The fish assemblage in the mainstem of Spruce Fork is in relatively good condition. Spruce Fork is a locally important rock bass and smallmouth bass fishery. Rock Bass and Smallmouth Bass are moderately sensitive gamefish species. While sampling Spruce Fork in 2010, recreational fishing was observed in the lower reaches of the stream and there was evidence of fishing in the upper reaches as well. Species present in Spruce Fork upstream and downstream of Seng Camp Creek are typical of streams of this size within the Coal River Basin and have not changed appreciably over the last 60 years.

4. Birds⁹

Many terrestrial bird species depend on the headwater streams like those of the Spruce Fork for their survival. The ecotone (transition area) between terrestrial and aquatic habitats results in diverse flora and fauna. For example, unique avifauna assemblages can be found along the riparian zone of headwater streams.

Among the many migratory birds likely to breed in the project area, there are six species that the USFWS has designated as Birds of Conservation Concern (BCC) within the Appalachian Mountains Bird Conservation Region (AMBCR). These include the cerulean, Kentucky, Swainson's and worm-eating warblers, the wood thrush, and the Louisiana waterthrush. The first five of these are also designated as BCC species within the USFWS's Northeast Region as a whole and nationally (USFWS 2008). The first four are also considered to be among the 100 most at-risk bird species in North America (Wells 2007).

The Louisiana waterthrush (*Seiurus motacilla*), a neotropical migrant song bird, is considered an obligate headwater riparian songbird (an example of water-dependent wildlife) because its diet is comprised predominantly of immature and adult aquatic macroinvertebrates found in and alongside headwater streams and because it builds its nest in the stream banks. Breeding waterthrushes nest and forage primarily on the ground along medium- to high-gradient, first- to third-order, clear, perennial headwater streams flowing through closed-canopy forest. Good water quality is a key component of the species breeding habitat. Headwater streams like Pigeonroost Branch and Oldhouse Branch that support healthy macroinvertebrate communities are food sources for species such as the Louisiana waterthrush.

The Appalachian Mountain Bird Conservation Region (AMBCR), which extends from southeastern New York south to northern Alabama, is thought to support a substantial portion of the Louisiana waterthrush's breeding population, perhaps as much as 45 percent. West Virginia, the only state that lies entirely within the AMBCR, encompasses the largest contiguous area of high relative breeding abundance over the species' entire breeding range, based on North American Breeding Bird Survey (BBS) data from 1994-

⁹ Much of the discussion related to avian and bat species is based upon communications with the U.S. Fish and Wildlife Service.

2003. The West Virginia population may serve as a source for populations elsewhere in the breeding range. The Louisiana waterthrush is also an area-sensitive species, requiring undisturbed forest tracts of 865 acres to sustain a population (Robbins, C.S., J.R. Sauer, R.S. Greenburg, and S. Droege. 1989). The most effective management protocol for the Louisiana waterthrush would appear to be protection of forest tracts and water systems inhabited on both breeding and wintering areas particularly moderate- to high-gradient headwater streams, which compose 75-80% of stream length in a typical watershed.

Bird species that rely on mature forest habitats that are on the Audubon watch list as declining species and are listed as probable in the area include the Swainson warbler (*Limnothlypis swainsonii*), Kentucky warbler (*Oporornis formosus*), and Cerulean warbler (*Dendroica cerulean*).

The Cerulean warbler in particular is considered an area-sensitive species; it is thought to require large (greater than 30 sq miles) tracts of mature interior forest habitat to support stable breeding populations. This species is a canopy-foraging insectivorous neotropical migrant songbird that breeds in mature deciduous forests with broken, structurally-diverse canopies across much of the eastern United States and winters in middle elevations of the Andes Mountains of northern South America. Important among a number of breeding season constraints are the loss of mature deciduous forest, particularly along stream valleys, and fragmentation and increasing isolation of remaining mature deciduous forest. The cerulean warbler appears to be more sensitive than most other North American birds to landscape-level changes in habitat. The USFWS has designated the cerulean warbler a Species of Management Concern and a Species of Conservation Concern throughout its range. It has also been preliminarily designated by the Appalachian Mountains Joint Venture as a Species of Highest Conservation Priority within the Appalachian Mountains Bird Conservation Region, which encompasses West Virginia. The AMBCR is thought to support about 80 percent of the species' entire breeding population, and the AMBCR breeding population likely functions as a source for populations elsewhere in the breeding range.

The Acadian flycatcher (*Empidonax virescens*) is commonly encountered throughout the Central Appalachian Ecoregion, but despite the large expanse of existing forest habitat, it is primarily restricted to forested tracts with understory vegetation along small headwater streams, where it can feed on emergent aquatic insects. Spruce Fork and its tributaries meets these habitat requirements. Neotropical migrant songbirds are also often attracted to headwater streams for breeding areas because of the diversity of the habitat and the availability of emergent aquatic insects.

5. Bats

Thirteen species of bats are found in West Virginia. Most North American bats are insectivorous, which capture their prey by foraging in flight, catching flying insects from a perch, or collecting insects from plants.

Different species of bats often have distinct life history traits and behaviors. Some bats

are solitary and hang in tree foliage, attics, barns, and other protected places during the day. Other bats are colonial and cluster in caves and mine tunnels. Bats have one of the slowest reproductive rates for animals their size. Most bats in northeastern North America have only one or two pups a year and many females do not breed until their second year. This low reproductive rate is somewhat offset by a long life span, often over 20 years. The little brown bat, common in North America and in West Virginia, is the world's longest lived mammal for its size, with a maximum life-span over 32 years. During the winter, some bats migrate south in search of food, while others hibernate through the cold weather when insects are scarce. Bats that do migrate usually travel less than 200 miles, often following the same routes as migratory birds.

Species that have potential to be found in the area of south-Central West Virginia that encompasses the Spruce No. 1 Mine include the northern bat (*Myotis septentrionalis*), big brown bat (*Eptesicus fuscus*), red bat (*Lasiurus borealis*), eastern small-footed bat (*Myotis leibii*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*), northern long-eared bats (*Myotis septentrionalis*) and the Indiana bat (*Myotis sodalis*).

Both the Indiana and Virginia big-eared bats are listed as endangered under the Endangered Species Act. The USFWS was also recently petitioned to list the eastern small-footed bats and the northern long-eared bats under the ESA. Five eastern small-footed bats and 16 northern long-eared bats were captured during mist net surveys conducted at the Spruce No. 1 project site in 2004, representing 7.6 and 24.2 percent, respectively, of all bats captured (U.S. Army Corps of Engineers Huntington District 2006, DEIS Spruce No. 1 Mine. Appendix M).

Indiana bats have been described as once one of the most common mammals in the Eastern United States. Between 1960 and 2004, biologists have documented a 56 percent population decline in Indiana bats. Indiana bats feed solely on emerged aquatic and terrestrial flying insects. They are habitat generalists and their selection of prey reflects the environment in which they forage. In a study in the Allegheny Mountains, activity in non-riparian upland forest and forests in which timber harvest had occurred was low relative to forested riparian areas. This evidence suggests that the forested riparian zones of the project area would be more suitable habitats for Indiana bat populations than active or restored mining sites.

Mist net surveys were conducted in the project area in 2000 and 2004, and no Federally-listed bats were captured. Although the capture of bats confirms their presence, failure to catch bats does not absolutely confirm their absence (U.S. Fish and Wildlife Service 2007, pg. 252). The project area occurs roughly half-way between known hibernacula in northeastern Kentucky and southeastern West Virginia. Since the most recent surveys at the Spruce No. 1 site, maternity roosts have been documented in central and north-central Boone County. Additionally, a juvenile Indiana bat was captured on August 9, 2010 in southwest Fayette County, indicating the presence of a maternity colony in that area.

C. Summary

Based on the foregoing, EPA Region III finds that Pigeonroost Branch and Oldhouse Branch contain important wildlife resources and habitat. The Region bases its conclusion on several factors including the similarity of Pigeonroost Branch and Oldhouse Branch to the reference quality White Oak Branch and therefore they support conditions representing some of the last remaining least degraded streams and riparian areas within the Spruce Fork sub-watershed and the Coal River sub-basin.

V. Basis for Recommended Determination

A. Section 404(c) Standards

Section 404(c) provides:

The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.

While EPA strongly prefers to initiate the Section 404(c) process prior to issuance of a permit, Section 404(c) and EPA's implementing regulations authorize EPA to initiate the Section 404(c) process after a permit has been issued by withdrawing specification of a disposal site. See 40 CFR 231.1(a); see also definition of "withdraw specification," 40 CFR 231.2(a). In this case, consistent with Section 404, Pigeonroost Branch and Oldhouse Branch were specified as disposal sites in DA Permit No. 199800436-3.

Section 404(c) does not define the term "unacceptable adverse effect." EPA's regulations at 40 CFR 231.2(e) define "unacceptable adverse effect" as:

Impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the Section 404(b)(1) Guidelines (40 CFR Part 230).

For purposes of the Spruce No. 1 mine, the relevant portions of the Section 404(b)(1) Guidelines that are particularly important for assessing the unacceptability of environmental impacts include:

- Less environmentally damaging practicable alternatives (230.10(a))

- Water quality impacts (230.10(b))
- Significant degradation of waters of the United States (230.10(c))
- Minimization of adverse impacts to aquatic ecosystems (230.10(d))
- Cumulative effects (230.11(g)); and
- Secondary effects (230.11(h))

The purpose of the Clean Water Act is to “restore and maintain the physical, chemical, and biological integrity of the Nation’s waters.” 33 U.S.C. 1251(a). Part of the concept of protecting the “biological integrity” of the Nation’s waters is protection of the indigenous, naturally occurring community. This goes beyond protecting the function performed by various members of the aquatic community and extends to protection of the quality of the aquatic community itself. *See Alameda Water & Sanitation District v. EPA*, 930 F. Supp.486 (D. Colo. 1996).

B. Adverse impacts from specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material from the Spruce No. 1 Mine

The impacts from the specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material from the Spruce No. 1 Mine will occur through several different pathways.

First, direct impacts will occur as a result of the discharge of fill (excess spoil, mine through, and construction of valley fills), which will bury much of Pigeonroost Branch and Oldhouse Branch and eliminate the buried ecosystems, including all wildlife living in those streams. Burial of Pigeonroost Branch and Oldhouse Branch also will eliminate habitat for wildlife that depend upon those streams. Loss of the buried portions of Pigeonroost Branch and Oldhouse Branch will impact wildlife that depend on those headwater streams for all or part of their lifecycles and adversely affect adults, juveniles, larvae, and/or eggs.

In addition, adverse impacts will occur to wildlife that live outside the footprint of the fills and sedimentation ponds. Discharges of fill material into Pigeonroost Branch and Oldhouse Branch will have the effect of removing those streams as sources of freshwater dilution and adversely affect the delivery of headwater stream ecosystem functions to downstream waters. Studies have shown a strong correlation between the construction of valley fills for surface coal mining in Appalachia and significant adverse impact on downstream macroinvertebrate communities.

There is also a likelihood that the discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch will transform those areas into sources of contaminants (particularly conductivity and selenium) contributing to degradation of downstream waters. The project as authorized also has the potential to contribute to conditions that would support blooms of golden algae that release toxins that can kill fish and other aquatic life.

To evaluate the impacts of the Spruce No. 1 project, Region III has consulted the PEIS and available data and literature documenting impacts from similar projects. Region III also has examined impacts caused by the portion of the Spruce No. 1 Mine that has already been

constructed in the Seng Camp Creek watershed (specifically, Valley Fill 1A). In addition, Region III reviewed the nearby Mingo Logan Dal-Tex operation. Based on location and similarity of geology and minerals, impacts from the Mingo Logan Dal-Tex operation are likely to be a good predictor of impacts from the Spruce No. 1 Mine. This was acknowledged by the Huntington District Corps of Engineers in the Spruce No. 1 EIS, which stated: “The past and present impacts to topography, geology, and mineral resources of the previous mining along the western side of Spruce Fork are similar to the anticipated impacts of the Spruce No. 1 Mine, as mining is to occur in the same strata.”

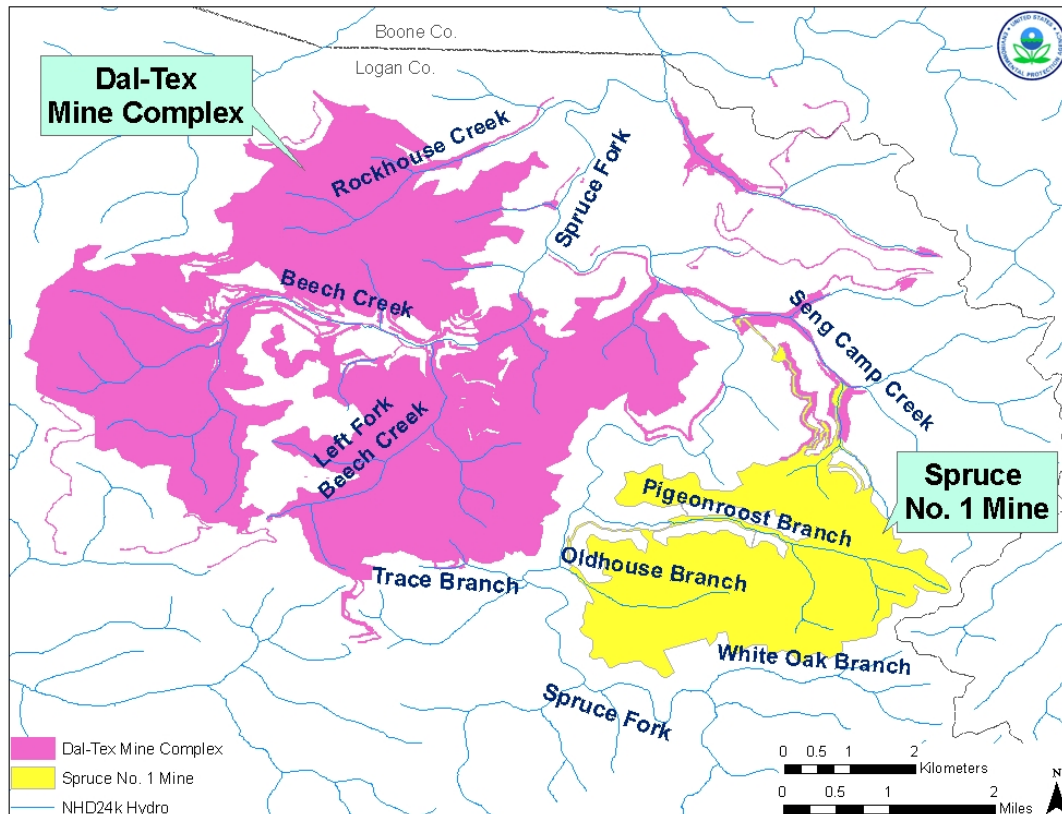


Figure 7 Spruce No. 1 Mine and the Dal-Tex Mine Operation

Region III completed a review of rock cores and corresponding cross sections for the Dal-Tex mines including the Gut Fork mine (immediately across Spruce Fork from Spruce No.1; Figure 7) and compared those to the Spruce No. 1 mine. This review, which is set forth in Appendix 4, indicates that, for the most part, the formations are repeated from the Dal-Tex mine complex to the Spruce No 1 mine location. Per the EIS, the same coal beds are to be developed for the Spruce No. 1 mine as for the Del-Tex mine. Also, these coal bed sequences are similar to those described in the literature for southern West Virginia coal bed sequences and the geologic column for the Spruce No 1 mine.

1. Effects on Water Chemistry

The Section 404(b)(1) Guidelines direct that no permit should issue if the discharge will cause or contribute to violations of applicable water quality standards or if the discharge will cause or contribute to significant degradation of the aquatic ecosystem, including but not limited to significant adverse effects on stages of aquatic life and other wildlife dependent upon aquatic ecosystems, including the transfer concentration, and spread of pollutants or their byproducts outside the disposal area. 40 C.F.R. §§230.10(b)(1) & 230.10(c). *See also* 40 C.F.R. §§ 230.31.

Adverse changes in water chemistry frequently have a corresponding impact on wildlife and fisheries that live in or depend upon the water. Potential impacts to water chemistry are considered because they may affect the native aquatic and water-dependent communities in the Spruce Fork watershed.

a. Selenium

Discharges from the Spruce No. 1 Mine Complex project are likely to increase selenium loading to the immediate receiving streams and downstream waters. The State of West Virginia has established a numeric chronic water quality criterion for selenium (5 µg/L) to protect instream aquatic life. Selenium is a naturally occurring chemical element that is an essential micronutrient, but excessive amounts of selenium can also have toxic effects. For aquatic animals, the concentration range between essential and toxic is very narrow, being only a few micrograms per liter in water. Selenium toxicity is primarily manifested as reproductive impairment and birth defects due to maternal transfer, resulting in embryotoxicity and teratogenicity in egg-laying vertebrates (e.g., fish and ducks). The most sensitive toxicity endpoints in fish larvae are teratogenic deformities such as skeletal, craniofacial, and fin deformities, and various forms of edema. Embryo mortality and severe development abnormalities can result in impaired recruitment of individuals into populations (Chapman et al. 2009). A WV draft study indicates that elevated selenium concentrations in fish eggs, increased larval deformity rates and increased deformity rates in mature fish are occurring in the Mud River Reservoir, Boone County, WV due to mining activities. These adverse conditions were all associated with elevated water column selenium concentrations (WVDEP, 2009, draft).

In West Virginia, coals that contain the highest selenium concentrations are found in a region of south central West Virginia where the Allegheny and Upper Kanawha Formations of the Middle Pennsylvanian are mined (WVGES 2002). WVDEP reports that some of the highest coal selenium concentrations are found in the central portion of the Coal River watershed where significant active mining and selenium impaired streams are located, in the immediate vicinity of the Spruce No. 1 project. Selenium is discharged when surface mining activities expose selenium-bearing material that comes in contact with water and contaminated water drains from the mining area to surface waters. The sedimentation ponds that are the usual form of water treatment at mining sites generally are not effective at treating selenium before effluent is discharged from ponds to downstream waters.

To evaluate the impact of discharges into Pigeonroost Branch and Oldhouse Branch as authorized by the DA Permit, Region III has compared selenium levels in Pigeonroost Branch and Oldhouse Branch with selenium levels in waters that have been impacted by the nearby Dal-Tex operation.¹⁰ In addition, Region III has reviewed data from discharge monitoring reports from mining outlets for the portion of the Spruce No. 1 Mine that has been constructed in the Seng Camp Creek watershed. Figure 8 shows mine outlet locations.

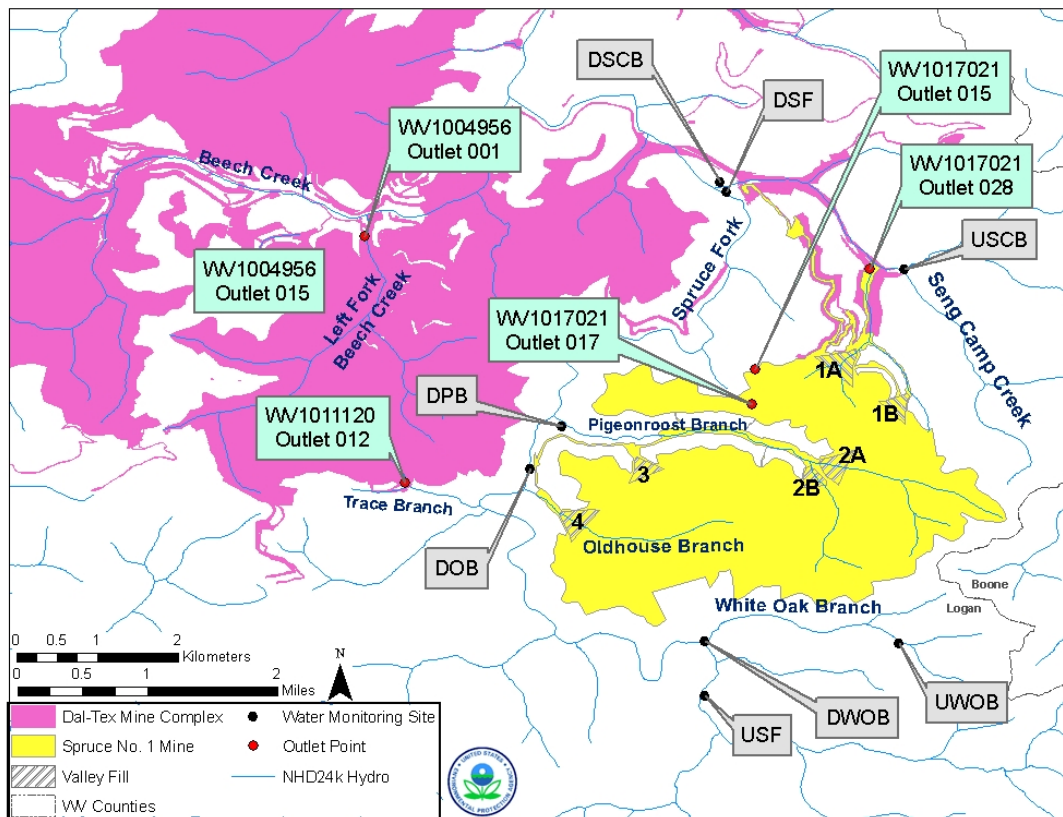


Figure 8: Dal-Tex and Spruce No. 1 Mine outlet locations.

¹⁰ Levels of selenium in other nearby waters that have been impacted by surface coal mining activity and generally have similar geology also support a prediction that construction of the Spruce No. 1 Mine as currently authorized will result in elevated levels of selenium in downstream waters. Selenium concentrations have exceeded the Se criterion at least three times in six (6) other mined streams in the Coal River Sub-basin. These include White Oak Creek (a tributary to the Coal River), the left Fork of White Oak Creek, Seng Creek (another tributary to the Coal River); and Casey Creek, James Creek, and Beaver Pond Branch, all tributaries to Pond Fork. These elevated levels of selenium demonstrate that the geology in the area of the Spruce No. 1 mine is likely to release selenium during mining activities. See Appendix 2 for further details on selenium.

Table 3 provides a summary of selenium averages and ranges for Pigeonroost Branch and Oldhouse Branch and streams draining the nearby Dal-Tex operation (Left Fork Beech Creek, Beech Creek, and Trace Branch). The table also contains data for White Oak Branch (upstream of Spruce No. 1 as currently authorized) and Seng Camp Creek (receiving water for the portion of Spruce No. 1 that is under construction).

Summarizing the data in the following table, streams draining the nearby Dal-Tex operation have selenium concentrations exceeding the 5 ug/l chronic selenium numeric criterion. The data from the Dal-Tex mine complex do not indicate any decrease in selenium concentrations over the period of record. These data strongly suggest construction of valley fills and other discharges of fill material from the Spruce No. 1 Mine into Pigeonroost Branch and Oldhouse Branch would likely result in discharges of elevated levels of selenium in the receiving waters and lead to significant degradation of water quality of the receiving waters and downstream waters. Such degraded water quality would be likely to impact downstream wildlife populations, including fish population

Table 3. Selenium Concentrations (ug/l) Near Spruce No. 1 Project Area

Stream Name		Source and time period of data					
	Subbasin	PEIS (2000-2001)		WVDEP (2002-2003)		WVDEP (2005-2006)	
		Se (avg)	Se (range)	Se (avg)	Se (range)	Se (avg)	Se (range)
Average and Range of Se in Tribs to Spruce Fork that drain Spruce No. 1 project area							
White Oak Branch	Spruce Fork	<3 ND		<5 ND		NS	
Oldhouse Branch	Spruce Fork	<3 ND		<5 ND		NS	
Pigeonroost Branch	Spruce Fork	<3 ND		<5 ND		NS	
Seng Camp Creek	Spruce Fork	NS		<5 ND		NS	

Average and Range of Se in Tribs to Spruce Fork draining Dal-Tex Operation							
Beech Creek ¹¹	Spruce Fork	7.5	5.6-9.5	6	5.0-9.0	12.3	6.0
Left Fork of Beech Creek	Spruce Fork	22.7	15.3-31.1	22	5.0-53.0	NS	
Trace Branch	Spruce Fork	NS	NS	7	5.0-10.0	NS	
Rockhouse Branch	Spruce Fork	5.3	3.8-8.0	< 5 ND	< 5 ND	NS	

ND: Se not detected. Detection limit shown.

NS: Not sampled. Stream was not sampled for the study shown.

Graphical trends of selenium concentrations from Discharge Monitoring Report (DMR) records for January 2007 to June 2010 from three outfalls from the Dal-Tex Mine Operations are shown in the following Figures 9-11. These demonstrate that the discharges from those outfalls consistently exceed West Virginia's chronic numeric water quality criterion for selenium (5 µg/L).

¹¹ In the WVDEP study on selenium bioconcentration factors, selenium was also found in fish tissue in Beech Creek (average 7.55 mg/kg).

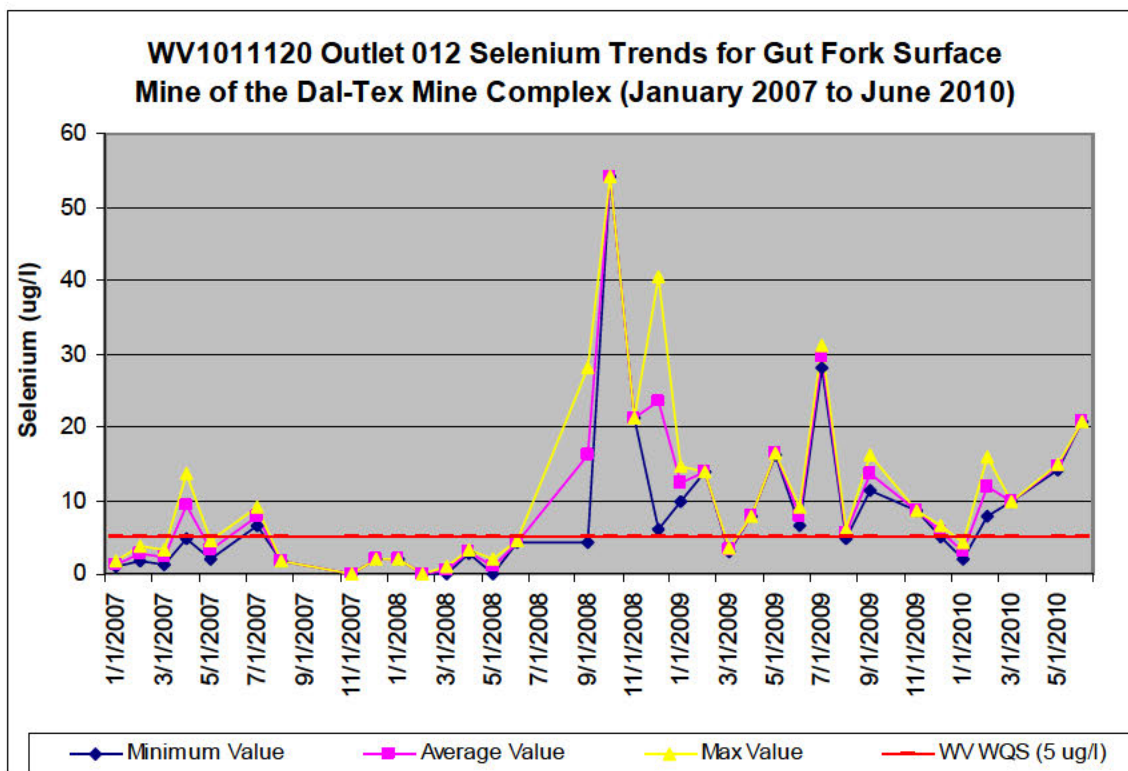


Figure 9: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1011120 – Outlet 012 (Mingo Logan Coal Company's Gut Fork Surface Mine of the Dal-Tex Mine Complex)

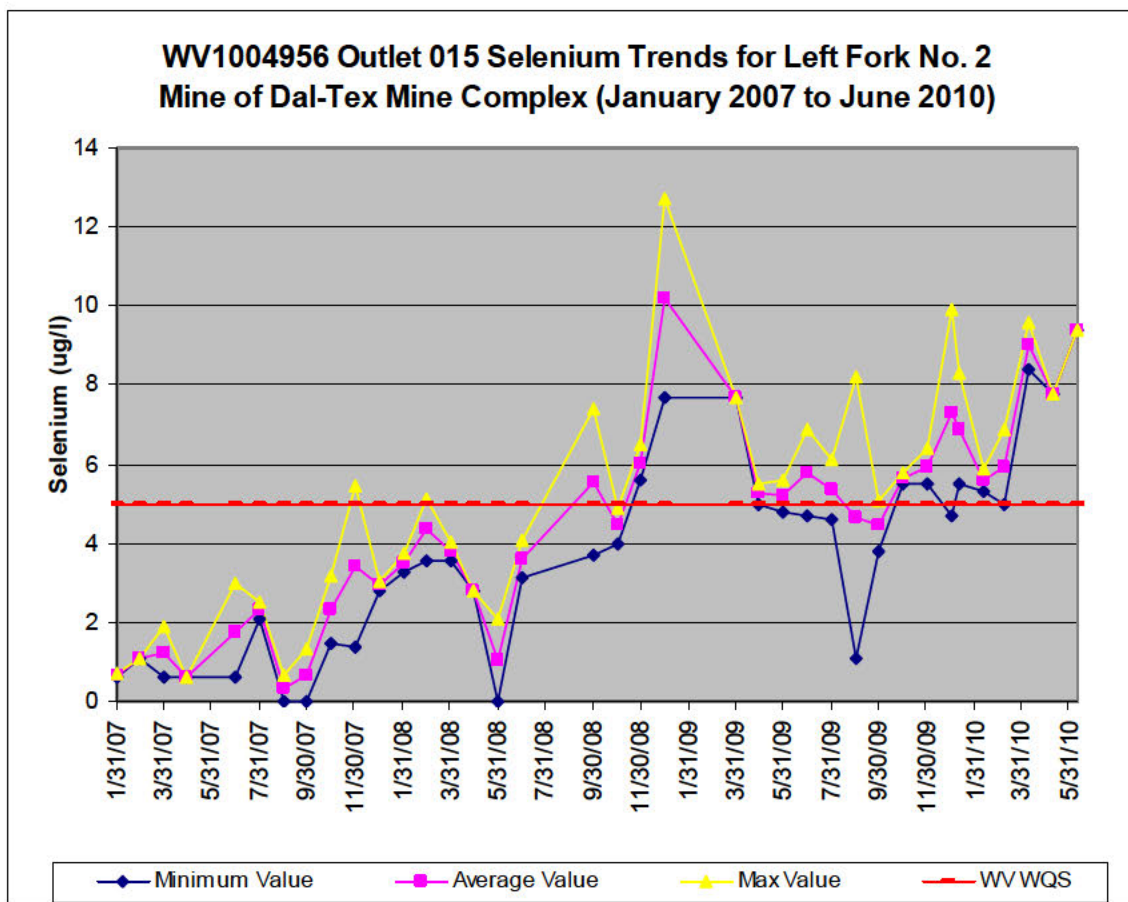


Figure 10: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1004956 – Outlet 015 (Mingo Logan Coal Company’s Left Fork No. 2 Mine of the Dal-Tex Mine Complex)

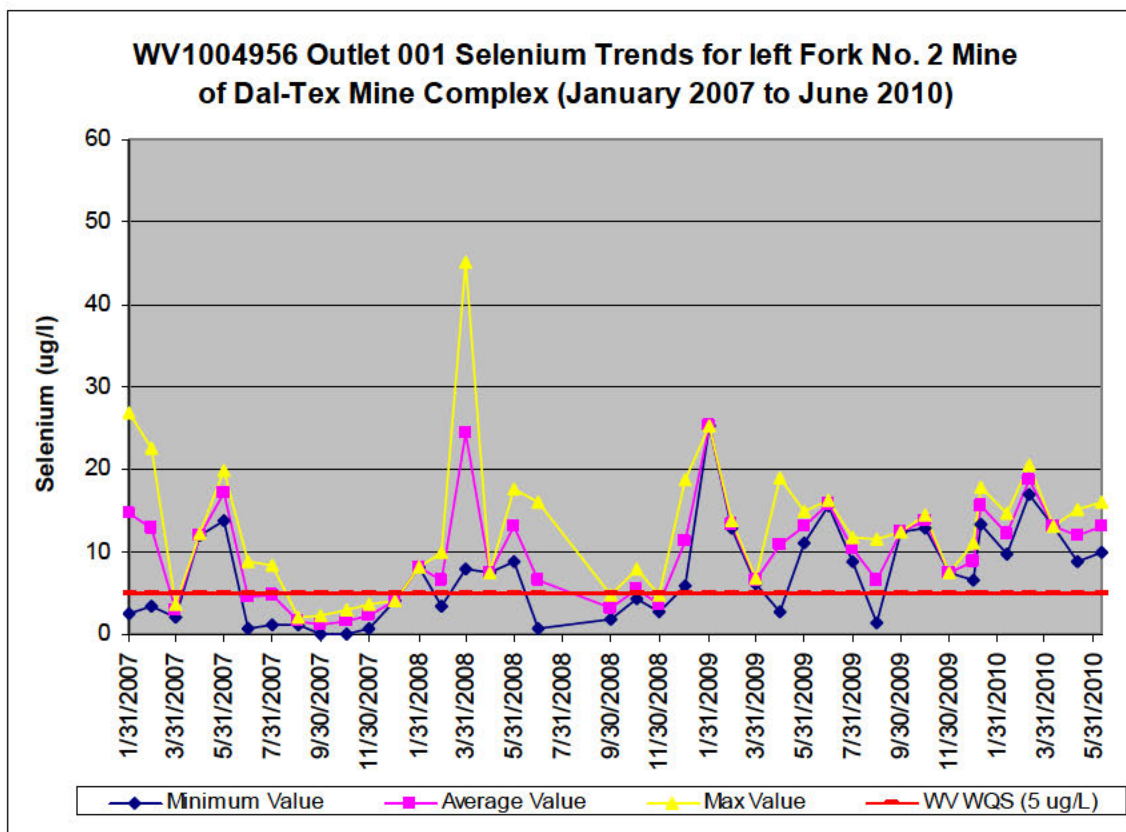


Figure 11: Selenium Trends (January 2007 to June 2010) for NPDES Permit WV1004956 – Outlet 001 (Mingo Logan Coal Company’s Left Fork No. 2 Mine of the Dal-Tex Mine Complex)

Region III also reviewed data from the portion of the Spruce No. 1 Mine that is already constructed in Seng Camp Creek (Figure 12). These data also indicate that construction of valley fills in Pigeonroost Branch and Oldhouse Branch would likely result in discharges of elevated levels of selenium. The Spruce No. 1 project has active mining in the Right Fork of the Seng Camp Creek sub-watershed. Recent NPDES DMRs for a 16 month period (December 2008 to March 2010) show that the constructed portion of the Spruce No. 1 project (Outlet 028) is discharging selenium at concentrations that exceed West Virginia’s chronic numeric water quality criterion (Table 4).¹² A technical review of the submitted 16 monthly DMR records for the Spruce No. 1 Outlet 028 document the maximum values exceeded the chronic selenium water quality criteria of 5 µg/L on six occasions (December 2008, January 2009, August 2009, September 2009, February 2010, and March 2010) representing a 37.5% exceedance rate. In addition, the average monthly measurements during this same time frame for Outlet 028 exceeded the chronic water quality criterion on 4 of the 16 monthly DMR reports (December 2008, January 2009, September 2009, and March 2010) representing a 25% exceedance rate of the WV

¹² The July 2009 DMR was not provided for review.

chronic water quality criterion for selenium. Selenium concentrations in excess of the chronic criterion were also reported from Outlet 017.¹³

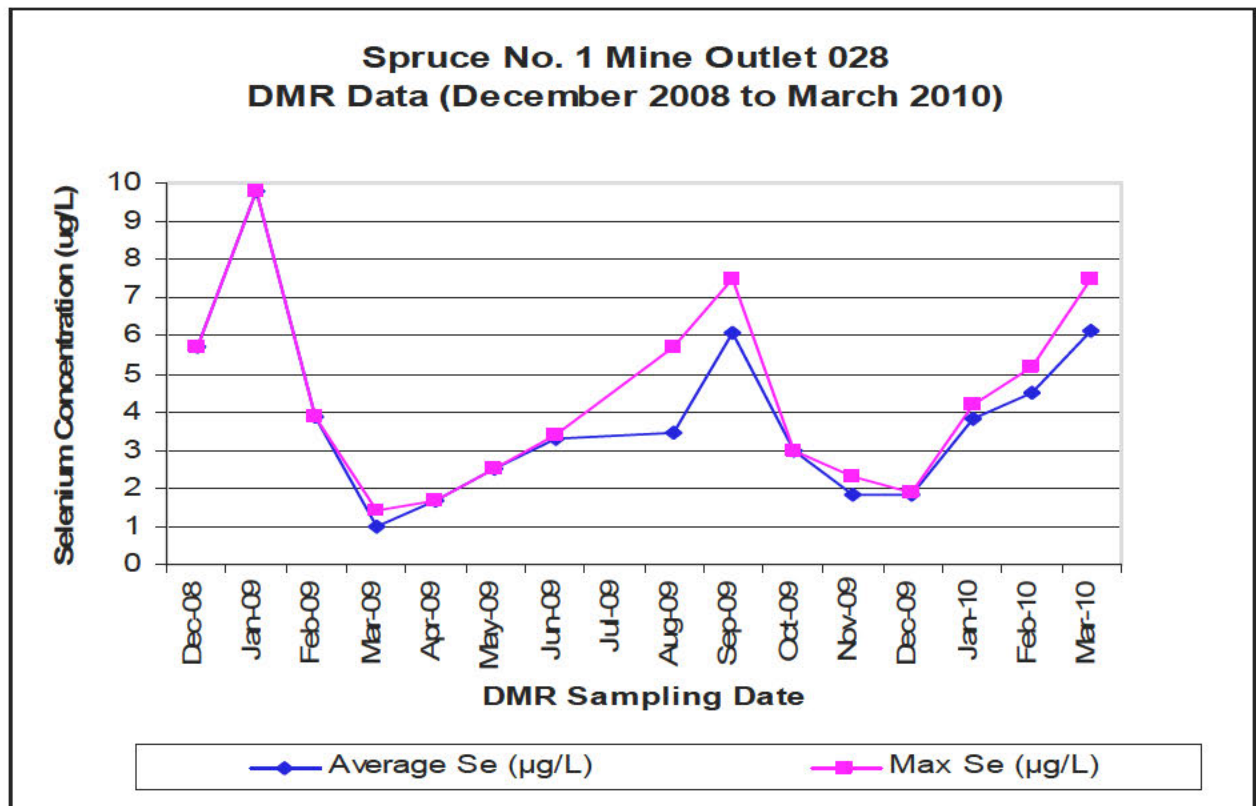


Figure 12: Selenium concentrations in discharge from outlet 028 on Spruce No. 1 Mine

¹³ To the extent that commenters have stated that selenium discharges should be addressed only through the NPDES permit, the Section 404(b)(1) Guidelines provide an independent obligation to assure compliance with water quality standards (40 CFR 230.10(b)). Moreover, it is noted that the NPDES permit issued for the Spruce No. 1 project establishes effluent limitations for selenium in only three of the outfalls in the NPDES permit. The permit requires only monitoring at the remaining outfalls, including the outfalls in Seng Camp Creek discussed herein. To the extent the Company has commented that the impacts from the Dal-Tex operation are not a good predictor of selenium impacts from construction of Spruce No. 1 due to implementation of a materials handling plan at Spruce No. 1, it is noted that the materials plan as being implemented by Mingo Logan in the Seng Camp Creek watershed has not fully succeeded in preventing exceedance of the numeric water quality criterion for selenium at Outfalls 17 and 28. Moreover, the Arch corporate family, including Mingo Logan, has conceded that its efforts to control selenium at a number of its active surface coal mines in West Virginia have been unsuccessful. Arch's various subsidiaries recently have requested extensions of NPDES compliance schedules for selenium discharges at numerous facilities, further indicating challenges in meeting the WV chronic criterion.

Table 4. Total Recoverable Selenium (µg/L) for Outlets 015, 017 and 028 for NPDES Permit WV1017021, Mingo Logan Coal Company Spruce No. 1 Mine. Note: Shaded areas indicate exceedences of the selenium standard (5 µg/L).

Site Code	Site Location	Sample Date	Min Value	Ave. value	Max value
015	Outlet 015	12/31/2008	0.00	0.00	0.00
017	Outlet 017	12/31/2008	0.00	0.00	0.00
017	Outlet 017	9/30/2009	19.20	19.20	19.20
028	Outlet 028	12/31/2008	5.70	5.70	5.70
028	Outlet 028	1/31/2009	9.80	9.80	9.80
028	Outlet 028	2/28/2009	3.90	3.90	3.90
028	Outlet 028	3/31/2009	0.60	1.00	1.40
028	Outlet 028	4/30/2009	1.70	1.70	1.70
028	Outlet 028	5/31/2009	2.50	2.50	2.50
028	Outlet 028	6/30/2009	3.20	3.30	3.40
028	Outlet 028	8/31/2009	1.25	3.48	5.70
028	Outlet 028	9/30/2009	4.60	6.05	7.50
028	Outlet 028	10/31/2009	3.00	3.00	3.00
028	Outlet 028	11/30/2009	1.40	1.85	2.30
028	Outlet 028	12/31/2009	1.80	1.85	1.90
028	Outlet 028	1/31/2010	3.40	3.80	4.20
028	Outlet 028	2/28/2010	3.80	4.50	5.20
028	Outlet 028	3/31/2010	4.70	6.10	7.50

The Spruce Fork watershed upstream of Pigeonroost Branch and Oldhouse Branch has selenium concentrations elevated above the chronic water quality criterion based on the instream DMR data. See Appendix 2, Table 14. The downstream Spruce Fork (DSF) site does not have selenium concentrations above the water quality criterion. This suggests that Pigeonroost Branch and Oldhouse Branch provide clean dilution water to the mainstem of Spruce Fork (Appendix 2, Table 15). The proposed valley fills for Pigeonroost Branch and Oldhouse Branch will eliminate the freshwater dilution contributions from both of these tributaries. Based on the current during- and post-mining water quality conditions observed in Seng Camp Creek downstream of the Spruce No. 1 project, selenium values will likely also increase at both outlet points on Oldhouse and Pigeonroost Branch during and post-mining. The increased selenium concentrations combined with the elimination of the dilution from these two tributaries will likely cause the selenium concentrations in Spruce Fork to increase.

In summary, water quality from streams and discharges draining both the Dal-Tex Mine Complex and the current operational portions of the Spruce No. 1 Mine confirm EPA's concern that the Spruce No. 1 project would be likely to discharge levels of selenium exceeding the WV chronic water quality criterion for selenium (greater than 5 µg/l)

downstream of the filled streams and in Spruce Fork.¹⁴ An important adverse impact of selenium residues in aquatic food chains is not just the direct toxicity to the organisms themselves, but rather the dietary source of selenium these organisms contribute to fish and wildlife species in the upper food web that feed on them.

b. Total Dissolved Solids/Conductivity

To understand the water quality impacts from increased total dissolved solids (TDS) and conductivity, it is helpful to understand the relationship between salinity, TDS, and specific conductivity, and the effect increases in conductivity have on native wildlife. For purposes of this action, when Region III discusses increased conductivity or TDS, we are referring to an increase in salinity in otherwise dilute freshwater, consistent with background levels in central Appalachian streams.

Salinity is the mass of salt in a given mass of water. While many of the elements that comprise mineral salts are essential nutrients, aquatic organisms are adapted to specific ranges of salinity and experience toxic effects from excess salinity.

Salinity reflects the amount of TDS in water. TDS is a measure of the combined content of all inorganic and organic substances contained in a solution in molecular, ionized or micro-granular (colloidal) suspended form and is normally reported in the units mg/l. The majority of TDS in many waters are simply salts.

Salinity is often expressed in terms of specific conductivity (hereafter referred to as conductivity). Conductivity is the ability of a solution to carry an electric current at a specific temperature (normally 25° C) and is normally reported in the units $\mu\text{S}/\text{cm}$ (microsiemens per centimeter). Conductivity and TDS both increase as the concentration of ions in a solution increase and are very strongly correlated. Normally, conductivity is reported by state and federal monitoring agencies because it is an instantaneous measurement that can be collected in situ with a meter, that does not require a laboratory analysis, and that is precise and accurate. "Conductivity" refers to the measurement and resulting data; "salinity" refers to the environmental property that is being measured. Conductivity is an excellent indicator of the total concentration of all ions and is also a good predictor of aquatic life use impairment, especially in the ecoregion

¹⁴ The concentrations of water column selenium observed at the Dal-Tex outlets and Seng Creek are significant in the fact that these concentrations have been associated with elevated fish tissue concentrations that are above the levels that cause teratogenic deformities in larval fish, leave fish with Se concentrations above the threshold for reproductive failure (4 ppm), and place birds at risk of reproductive failure through ingestion of fish with selenium concentrations greater than 7 ppm (Lemley 1997). According to the WVDEP's study on 'Selenium Bioaccumulation among select stream and lake fishes in West Virginia' (WVDEP 2009), Seng Camp had the highest average water column concentration (27.20 ppb) and a corresponding average fish tissue concentration of 8.16 ppm. While Beech Creek had a water concentration of 12.30 ppb with a corresponding average fish tissue concentration of 7.55 ppm. As outlined in the graphical trends of selenium concentrations from the DMR records for three permitted outlets for the Dal-Tex Mine Complex (WV1011120, WV1004956, WV1004956), these values are similar or greater than the Seng Camp and Beech Creek concentrations which supports our view that the corresponding fish tissue concentrations will be elevated to levels that cause fish and bird impairments.

69 in which the Spruce No. 1 project is located.

A recent study found that elevated conductivity greater than 500 $\mu\text{S}/\text{cm}$ caused by alkaline mine effluents was strongly associated with high probability of degradation of native biota (Pond et al. 2008). In that study, 20 of 20 mined sites (100%) with conductivity levels greater than 500 $\mu\text{S}/\text{cm}$ reflected adverse impact to native macroinvertebrates using a genus-level multi-metric index, and 17 of those 20 sites (85%) reflected adverse impact to native macroinvertebrates using the family-level WVSCI index (using the less than 68 threshold).¹⁵

WVDEP ambient monitoring data confirm the high probability of adverse impact to aquatic life when conductivity levels are elevated to greater than 500 $\mu\text{S}/\text{cm}$. WVDEP macroinvertebrate data from subcoregion 69d (the Cumberland Mountains of the Central Appalachians, the specific subcoregion where the project is located) were analyzed to determine the percentage of WVDEP sites that reflected adverse impact to aquatic life when the instream conductivity levels exceeded 500 $\mu\text{S}/\text{cm}$. This analysis indicates that a majority of the sites reflected adverse impact to aquatic life when conductivity levels were elevated above 500 $\mu\text{S}/\text{cm}$, even when accounting for the possible confounding effects of acidic pH and habitat degradation. For example, after removing low pH sites, only 100 sites out of 417 sites attained WVSCI scores greater than 68 when conductivity levels were greater than 500 $\mu\text{S}/\text{cm}$ (76% of the sites reflected WVSCI scores less than 68). When the potential confounding effect of habitat degradation was completely removed (this subset includes only sites with Rapid Bioassessment Protocol habitat scores greater than 140, indicating reference quality habitat), 62% of the sites still had WVSCI scores less than 68. See Appendix 1 and 2 for further detail on macroinvertebrates and conductivity.

EPA's draft report, *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* (USEPA 2010a), also recognizes stream aquatic life impacts associated with conductivity. This study, which is publicly available and is undergoing external peer review by the EPA's Science Advisory Board, applies EPA's standard methodology for deriving water quality criteria to field data and concludes that genus-level macroinvertebrate impacts to the biological community occur at conductivity levels as low as 300 $\mu\text{S}/\text{cm}$.

Pond et al. 2008 showed that mayfly richness is significantly reduced to a few or zero genera, and that several stonefly and caddisfly taxa were also extirpated or reduced in abundance, when conductivity exceeds 500 $\mu\text{S}/\text{cm}$ downstream of mining operations similar to Spruce No. 1. This mining-induced pattern was also documented in the eastern Kentucky coalfields (Pond 2010). Many mayfly, stonefly and caddisfly genera are extirpated from streams downstream of headwater valley fills, and this extirpation is strongly correlated to water quality degradation caused by mining. This extirpation is in

¹⁵ As noted elsewhere, in its 2008 Section 303(d) List, WVDEP identified a WVSCI score of 68 as the lowest score at which a waterbody was considered to "fully support" aquatic life. Less than 68 indicates degradation of the aquatic life use.

addition to direct burial of these macroinvertebrates and other wildlife, as previously described. See Appendix 1 macroinvertebrates for further detail.

After evaluating confounding effects as described above, scientific evidence points to the conclusion that the extirpation of macroinvertebrate taxa documented in these studies is caused by water quality degradation and not habitat degradation. Conductivity is an excellent predictor of native taxa loss from Appalachian streams while habitat variables provide little ability to predict taxa loss. Using the WV spring null model applied to genus-level data from Pond et al. (2008), Observed/Expected (O/E) scores strongly responded negatively ($R^2=0.63$) to increasing conductivity. See Section V.B.2.a.ii. below for a further explanation of the Observed/Expected Index. Water quality degradation caused by elevated conductivity explained more than twice the variance in O/E scores than did RBP habitat scores ($R^2=0.28$), confirming that conductivity is an excellent predictor of native taxa loss from Appalachian streams. Sediment deposition, substrate embeddedness, channel alteration, riparian zone width, pH, or temperature had no significant influence on O/E scores. From this analysis it is apparent that habitat degradation offered little explanatory value in O/E variation in this dataset.¹⁶

Data from WVDEP indicate that average conductivity values for Pigeonroost Branch and Oldhouse Branch are very low and are consistent with dilute background conditions in central Appalachian headwater streams (Table 5). Construction of valley fills and other discharges from the Spruce No. 1 Mine into Pigeonroost Branch and Oldhouse Branch would likely cause an increase in conductivity and TDS in receiving waters. This will have two effects: first, it will eliminate Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution to downstream waters, including Spruce Fork; and second, it will transform Pigeonroost Branch and Oldhouse Branch into sources of increased conductivity and TDS to downstream waters.

Construction of valley fills in the ecoregion in which the Spruce No. 1 Mine is located is strongly correlated with an increase in conductivity levels in downstream waters. Sedimentation ponds, which are the usual form of water treatment for surface coal mines, appear to be ineffective in removing TDS and decreasing conductivity. For example, average conductivity and sulfate levels are highly elevated in other tributaries to Spruce Fork where historical mining has occurred. Table 5 provides the following average conductivity and sulfate values for streams draining mined areas to the west of Spruce Fork in comparison with Pigeonroost Branch and Oldhouse Branch.

¹⁶ Sites downstream of MTM in Pond et al. 2008 were located in relatively natural stream reaches in order to help control for obvious habitat effects

Table 5. Average conductivity and sulfate values for streams in project area		
Stream	Conductivity Values	Sulfate Values
Rockhouse Creek	1012 uS/cm conductivity	407 mg/l sulfate
Left Fork of Beech Creek	2426 uS/cm conductivity	1019 mg/l sulfate
Beech Creek	1432 uS/cm conductivity	557 mg/l sulfate
Trace Branch	971 uS/cm conductivity	569 mg/l sulfate
Oldhouse Branch	90 uS/cm conductivity	28 mg/l sulfate
Pigeonroost Branch	199 uS/cm conductivity	99 mg/l sulfate

Average conductivity and sulfate concentrations in the mainstem of Spruce Fork to which Pigeonroost Branch and Oldhouse Branch flow are also strongly elevated to as much as ten times above natural background levels in Oldhouse Branch. Average conductivity at almost every monitoring site on the mainstem Spruce Fork exceeded 500 $\mu\text{S}/\text{cm}$. Only one site had an average conductivity of less than 500 $\mu\text{S}/\text{cm}$, which was located upstream of the project area, upstream of Adkins Fork, and southeast of Blair, WV.

Pigeonroost Branch and Oldhouse Branch are providing freshwater dilution to Spruce Fork thereby preventing conductivity levels in Spruce Fork from becoming even more elevated. Construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would remove sources of freshwater dilution to Spruce Fork and contribute to existing water quality degradation.

In addition to removing Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution for Spruce Fork, construction of valley fills and other discharges authorized by the permit into those waters also would likely transform Pigeonroost Branch and Oldhouse Branch into sources of elevated conductivity and TDS to downstream waters. As described in Section V.B.2.a. below, there is a strong correlation between elevated levels of conductivity and extirpation of macroinvertebrate taxa. Spruce Fork mainstem has little, if any, remaining assimilative capacity for conductivity.

Post-mining conductivity levels in Spruce Fork downstream of the project area were modeled using a watershed area weighted deterministic model with two post-mining average (500 and 1000 $\mu\text{S}/\text{cm}$) and maximum (1000 and 1500 $\mu\text{S}/\text{cm}$) conductivity values for Oldhouse Branch, Pigeonroost Branch and Seng Camp Creek. These values are conservative and likely underestimate the post-mining conductivity values. For example, when compared to Left Fork Beech Creek, which is completely mined and filled, the average and maximum conductivity values are 2425 and 3000 $\mu\text{S}/\text{cm}$. In Beech Creek, which is partially mined and filled, the average and maximum conductivity values are 1432 and 1776 $\mu\text{S}/\text{cm}$ (average and maximum values based on 2002-2003 WVDEP data). In every case, since the measured average and maximum conductivity levels in Spruce Fork are currently greater than 500 $\mu\text{S}/\text{cm}$ pre-mining, the modeled post-mining conductivity values are also greater than 500 $\mu\text{S}/\text{cm}$. Using the more conservative post-mining values (average 500 and 1000 $\mu\text{S}/\text{cm}$ and maximum 1000 and

1500 $\mu\text{S}/\text{cm}$), we estimate that average conductivity in Spruce Fork downstream of Seng Camp Branch could increase from 555 pre-mining to 745 $\mu\text{S}/\text{cm}$ post-mining and maximum conductivity could increase from 965 pre-mining to 1226 $\mu\text{S}/\text{cm}$ post-mining. EPA expects that these additional conductivity increases would likely further extirpate native aquatic macroinvertebrates (wildlife) that are not tolerant to increased conductivity. See Appendix 2 for further detail on conductivity.

2. Impacts to Wildlife

a. Macroinvertebrates

As set forth in Sections IV A.1 and I.B.1 above, benthic macroinvertebrates are diverse and healthy in the Spruce No. 1 project area and represent an important component of the aquatic community in Pigeonroost Branch and Oldhouse Branch. Furthermore, because of their productivity and secondary position in the aquatic food chain, they also play a critical role in the delivery of energy and nutrients to downstream reaches (in aquatic life stages) as well as to upland terrestrial habitats (in winged adult life stages).

Construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch will impact the native macroinvertebrate community in two ways. First, the macroinvertebrates that live in stream channels within the footprint of the valley fill will be destroyed. As set forth in Section V.C. below, it is not likely that the on-site stream creation proposed by the permittee as mitigation would support the quality of macroinvertebrate community that currently exists in Pigeonroost Branch and Oldhouse Branch. Second, construction of valley fills and other authorized discharges into Pigeonroost Branch and Oldhouse Branch would likely have an adverse impact on the macroinvertebrate communities in remaining downstream waters. Sensitive species of mayflies, stoneflies, and caddisflies currently inhabiting downstream waters will be impacted through increasing chemical loading of contaminants.

As set forth above, the 2006 Spruce No. 1 EIS states that impacts from the Spruce No. 1 Mine are expected to be similar to those from the Dal-Tex operation. Accordingly, conditions in streams impacted by the Dal-Tex operation will likely occur in the unfilled portions of the streams that will be impacted by the Spruce No. 1 Mine. To evaluate the impacts from the Spruce No. 1 Mine, Region III analyzed conditions in streams impacted by the Dal-Tex operation. Region III conducted three different analyses. First, Region III compared benthic macroinvertebrate collections from Pigeonroost Branch and Oldhouse Branch to benthic macroinvertebrate samples from streams that have been impacted by Mingo Logan's Dal-Tex operation. Second, Region III used an observed/expected approach. Third, Region III compared WVSCI scores in Pigeonroost Branch and Oldhouse Branch with streams impacted by the Dal-Tex operation. The following describes these three analyses.

i. Comparison of macroinvertebrate communities

To evaluate the impact of the project, EPA compared benthic collections from the Spruce No. 1 project area to Mingo Logan's Dal-Tex site (Table 1), using an equal number of

benthic samples collected at both locations. This analysis reveals that construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would likely result in degraded macroinvertebrate communities downstream of these discharges.

Considering the number of genera collected, the relatively unimpacted Pigeonroost Branch and Oldhouse Branch contain a far greater number and diversity of macroinvertebrate genera. Collectively, 85 different genera were collected from Pigeonroost Branch and Oldhouse Branch between 1999-2000, while only 56 different genera were collected from both Beech Fork and Left Fork Beech Fork, streams that drain the inactive Dal-Tex operations.

Region III further refined its analysis to a comparison of the Ephemeroptera, Plecoptera and Trichoptera (EPT: mayflies, stoneflies and caddisflies) taxa collected. In Pigeonroost and Oldhouse combined, 42 EPT taxa were collected, while at Dal-Tex (Beech and Left Fork Beech), only 12 EPT were found. Narrowing further to mayflies and stoneflies, there were 14 mayfly genera and 12 stonefly genera in Oldhouse Branch and Pigeonroost Branch but only two relatively pollution-tolerant mayfly genera and three pollution-tolerant stonefly genera were collected in streams draining the Dal-Tex mine.. EPA also found that caddisflies were rich (14 total genera) in Pigeonroost and Oldhouse, but only seven total genera were found in Beech and Left Fork Beech downstream of the Dal-Tex mine.

As set forth above in Section IV.A., macroinvertebrates are good indicators of watershed health, and differ in their tolerance to the amount and types of pollution. Macroinvertebrate communities integrate the effects of stressors over time and some taxa (i.e., taxonomic category or group such as phylum, class, family, genus, or species) are considered pollution-tolerant and will survive in degraded conditions. Some taxa are pollutant-intolerant and will die when exposed to certain levels of pollution. Thus, the composition of tolerant and intolerant (i.e., sensitive) communities informs scientists about the quality of the water. The presence of a large number of individuals from the more sensitive genera indicates good water quality conditions, whereas the presence of a large number of tolerant genera may indicate degraded conditions.

The data described above indicates a substantial reduction in taxa diversity in the mine-impacted waters. In addition, several tolerant taxa were found in the streams draining the Dal-Tex mine that were not found in the Spruce project area further indicating degradation and adverse impact to wildlife habitat (Table 1). Some of these taxa are highly tolerant snails that typically do not occupy healthy headwater streams in the Appalachians (*Lymnaeidae*, *Physella*, *Helisoma*). Other tolerant beetles and fly larvae found at Dal-Tex but not Pigeonroost or Oldhouse also indicate biological impacts and altered environmental conditions (i.e., atypical of Appalachian headwater streams) that foster the invasion of these tolerant taxa. Table 6 compares the macroinvertebrate taxa identified in Oldhouse Branch and Pigeonroost Branch with that found in streams that have been impacted by the Dal-Tex Mine.

Table 6. List of macroinvertebrate taxa identified from Spruce project and Dal-Tex.

Order	Family	Genus	Oldhouse +Pigeonroost	Beech+Left Fork Beech
			Spruce No. 1	Dal-Tex Mine
Oligochaeta	Oligochaeta	Oligochaeta	X	X
Nematoda	Nematoda	Nematoda		X
Proseriataoela	Plagiosomidae	<i>Hydrolimax</i>	X	
Tricladida	Planariidae	Planariidae	X	
Basommatophora	Lymnaeidae	Lymnaeidae		X
Basommatophora	Physidae	<i>Physella</i>		X
Basommatophora	Planorbidae	<i>Helisoma</i>		X
Coleoptera	Dryopidae	<i>Helichus</i>	X	
Coleoptera	Elmidae	<i>Dubiraphia</i>		X
Coleoptera	Elmidae	<i>Macronychus</i>		X
Coleoptera	Elmidae	<i>Microcylloepus</i>		X
Coleoptera	Elmidae	<i>Optioservus</i>	X	X
Coleoptera	Elmidae	<i>Oulimnius</i>	X	X
Coleoptera	Psephenidae	<i>Ectopria</i>	X	
Coleoptera	Psephenidae	<i>Psephenus</i>	X	X
Decapoda	Cambaridae	<i>Cambarus</i>	X	
Diptera	Ceratopogonidae	<i>Atrichopogon</i>		X
Diptera	Ceratopogonidae	<i>Bezzia/Palpomyia</i>	X	X
Diptera	Ceratopogonidae	<i>Dasyhelea</i>	X	X
Diptera	Chironomidae	<i>Acricotopus</i>		X
Diptera	Chironomidae	<i>Chaetocladius</i>	X	X
Diptera	Chironomidae	<i>Corynoneura</i>	X	X
Diptera	Chironomidae	<i>Cricotopus</i>	X	X
Diptera	Chironomidae	<i>Diamesa</i>	X	X
Diptera	Chironomidae	<i>Eukiefferiella</i>	X	X
Diptera	Chironomidae	<i>Metriocnemus</i>		X
Diptera	Chironomidae	<i>Micropsectra</i>	X	X
Diptera	Chironomidae	<i>Microtendipes</i>	X	
Diptera	Chironomidae	<i>Orthocladius</i>	X	X
Diptera	Chironomidae	<i>Parachaetocladius</i>	X	
Diptera	Chironomidae	<i>Parametriocnemus</i>	X	X
Diptera	Chironomidae	<i>Paraphaenocladius</i>		X
Diptera	Chironomidae	<i>Paratanytarsus</i>		X
Diptera	Chironomidae	<i>Polypedilum</i>	X	X
Diptera	Chironomidae	<i>Rheotanytarsus</i>	X	X
Diptera	Chironomidae	<i>Smittia</i>		X
Diptera	Chironomidae	<i>Stempellinella</i>	X	
Diptera	Chironomidae	<i>Stenochironomus</i>		X
Diptera	Chironomidae	<i>Stilocladius</i>	X	
Diptera	Chironomidae	<i>Sympotthastia</i>	X	
Diptera	Chironomidae	<i>Tanytarsus</i>	X	
Diptera	Chironomidae	<i>Thienemanniella</i>		X
Diptera	Chironomidae	<i>Thienemannimyia</i>	X	X
Diptera	Chironomidae	<i>Tvetenia</i>	X	X
Diptera	Chironomidae	<i>Zavrelimyia</i>	X	
Diptera	Empididae	<i>Chelifera/Metachela</i>	X	X
Diptera	Empididae	<i>Clinocera</i>	X	
Diptera	Empididae	<i>Hemerodromia</i>		X
Diptera	Simuliidae	<i>Prosimulium</i>	X	
Diptera	Simuliidae	<i>Simulium</i>	X	X
Diptera	Tabanidae	Tabanidae		X
Diptera	Tipulidae	<i>Antocha</i>		X
Diptera	Tipulidae	<i>Cryptolabis</i>	X	
Diptera	Tipulidae	<i>Dicranota</i>	X	
Diptera	Tipulidae	<i>Hexatoma</i>	X	

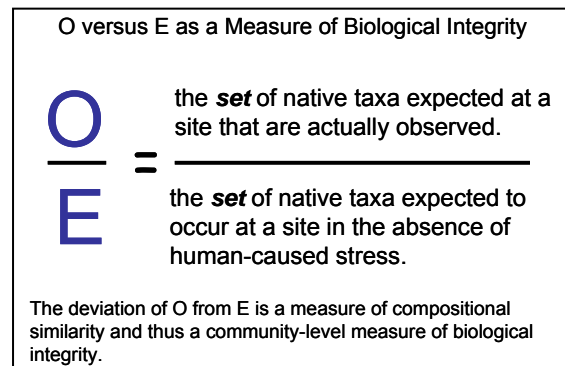
Table 6. Continued.

Continued			Oldhouse +Pigeonroost	Beech+Left Fork Beech
Order	Family	Genus	Spruce No. 1	Dal-Tex Mine
Diptera	Tipulidae	<i>Limnophila</i>	X	
Diptera	Tipulidae	<i>Limonia</i>	X	X
Diptera	Tipulidae	<i>Pseudolimnophila</i>	X	
Diptera	Tipulidae	<i>Tipula</i>	X	X
Ephemeroptera	Ameletidae	<i>Ameletus</i>	X	
Ephemeroptera	Baetidae	<i>Acentrella</i>	X	
Ephemeroptera	Baetidae	<i>Baetis</i>	X	X
Ephemeroptera	Baetiscidae	<i>Baetisca</i>	X	
Ephemeroptera	Ephemerellidae	<i>Drunella</i>	X	
Ephemeroptera	Ephemerellidae	<i>Ephemerella</i>	X	
Ephemeroptera	Ephemerellidae	<i>Eurylophella</i>	X	
Ephemeroptera	Ephemeridae	<i>Ephemer</i>	X	
Ephemeroptera	Heptageniidae	<i>Cinygmula</i>	X	
Ephemeroptera	Heptageniidae	<i>Epeorus</i>	X	
Ephemeroptera	Heptageniidae	<i>Stenacron</i>	X	
Ephemeroptera	Heptageniidae	<i>Maccaffertium/Stenonema</i>	X	
Ephemeroptera	Isonychiidae	<i>Isonychia</i>	X	X
Ephemeroptera	Leptophlebiidae	<i>Paraleptophlebia</i>	X	
Megaloptera	Corydalidae	<i>Corydalus</i>		X
Megaloptera	Corydalidae	<i>Nigronia</i>	X	X
Odonata	Aeshnidae	<i>Boyeria</i>		X
Odonata	Gomphidae	<i>Lanthus</i>	X	X
Plecoptera	Capniidae	<i>Capniidae</i>	X	
Plecoptera	Chloroperlidae	<i>Haploperla</i>	X	
Plecoptera	Leuctridae	<i>Leuctra</i>	X	
Plecoptera	Nemouridae	<i>Amphinemura</i>	X	X
Plecoptera	Nemouridae	<i>Ostrocerca</i>	X	
Plecoptera	Nemouridae	<i>Prostoia</i>		X
Plecoptera	Peltoperlidae	<i>Peltoperla</i>	X	
Plecoptera	Perlidae	<i>Acroneuria</i>	X	
Plecoptera	Perlodidae	<i>Isoperla</i>	X	
Plecoptera	Perlodidae	<i>Remenus</i>	X	
Plecoptera	Perlodidae	<i>Yugus</i>	X	
Plecoptera	Pteronarcyidae	<i>Pteronarcys</i>	X	
Plecoptera	Taeniopterygidae	<i>Taenionema</i>	X	
Plecoptera	Taeniopterygidae	<i>Taeniopteryx</i>	X	X
Trichoptera	Glossosomatidae	<i>Agapetus</i>	X	
Trichoptera	Glossosomatidae	<i>Glossosoma</i>	X	
Trichoptera	Goeridae	<i>Goera</i>	X	
Trichoptera	Hydropsychidae	<i>Ceratopsyche</i>	X	
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i>	X	X
Trichoptera	Hydropsychidae	<i>Diplectrona</i>	X	X
Trichoptera	Hydropsychidae	<i>Hydropsyche</i>	X	X
Trichoptera	Hydroptilidae	<i>Hydroptila</i>		X
Trichoptera	Limnephilidae	<i>Pycnopsyche/Hydatophylax</i>	X	
Trichoptera	Philopotamidae	<i>Chimarra</i>	X	X
Trichoptera	Philopotamidae	<i>Dolophilodes</i>	X	
Trichoptera	Polycentropodidae	<i>Polycentropus</i>	X	
Trichoptera	Psychomyiidae	<i>Psychomyia</i>	X	X
Trichoptera	Rhyacophilidae	<i>Rhyacophila</i>	X	X
Trichoptera	Uenoidae	<i>Neophylax</i>	X	
Tricladida	Planariidae	<i>Planariidae</i>	X	
Total Distinct Taxa			85	56
Total EPT Taxa			42	12

ii. Observed/Expected Index

In order to further predict and quantify the loss of taxa expected from construction of valley fills in Pigeonroost Branch and Oldhouse Branch as authorized, Region III applied a well-accepted and peer reviewed approach, called an Observed/Expected index (O/E) (Hawkins 2006, Van Sickle 2005) (Figure 13). O/E ratios basically represent the proportion of predicted taxa that were observed in a sample, compared to those expected in the sample, after predicting the probability that a sample site is a member of one or more fixed sets of reference site types.

Figure 13. Measure of biological integrity; O vs. E (C.P. Hawkins, Utah State Univ.).



Rather than using several reference site types, null models can be developed that assume only one set of comparable reference sites. Null models are appropriate when working in areas with relatively similar physical and regional characteristics that may have influence on the macroinvertebrate community (e.g., geology, stream slope, natural substrate, season and climate), as is the case in this application. For the WV null models, EPA first calculated the probability of capture (Pc) as the proportion of a taxon's occurrence in spring and summer at all mountain reference sites (combined ecoregions 67, Ridge and Valley, and ecoregion 69, Central Appalachians). For example, the stonefly *Leuctra* was present at 94% of mountain reference sites in spring, so its Pc value for spring is 0.94. EPA conducted this probability calculation for all non-chironomid taxa. The Pc's of all taxa with a Pc greater than 0.1 were then summed to yield the *Expected* number of taxa at a site for the given season (Table 7). Therefore, the *Expected* total number of taxa at a mountain site in spring is 20.4 and in summer is 18.7.

A site that is a perfect match to the richness of expected indigenous taxa will score 1.0, while downward deviation from 1.0 indicates increasing loss of expected taxa compared to regional reference (e.g., a score of 0.50 indicates a 50% loss of the expected taxa). Upward deviation (greater than 1.0) simply indicates that more taxa were collected than expected. (When a taxon is observed at a test site, that taxon is counted as 1 for the observed score, so if the Pc is less than 1 for that taxon, this can lead to O/E scores

greater than 1. For example, for the stonefly *Leuctra*, the Pc of capture is 0.94, so its tally for E is only 0.94, but if the taxa is observed at a site, its tally for O is 1.

We chose the 5th percentile of reference site O/E scores as a threshold to correspond to WVDEP's bioassessment threshold for assessing aquatic life support. This O/E 5th percentile was 0.64, indicating a loss of 36% of expected taxa.

The WV null model indicates that macroinvertebrate assemblages in Pigeonroost Branch, Oldhouse Branch and the upstream White Oak Branch are comparable to WVDEP mountain ecoregion reference sites and that there is adverse impact (O/E less than 0.64) to streams receiving drainage from MTM/VF operations in WV, including streams adjacent to the Spruce mine area (Tables 3 and 4). The highest O/E scores (1.18) were in Pigeonroost, Oldhouse and White Oak Branches. The lowest O/E scores (0.20) were in Beech and Left Fork of Beech Creek, both of which have been impacted by mining operations.

The model indicates that macroinvertebrate assemblages in Pigeonroost Branch and Oldhouse Branch are comparable to WVDEP mountain ecoregion reference sites. In contrast, past mining by Mingo Logan has led to the estimated extirpation of ~70% of the native expected taxa in their adjacent Dal-Tex mine operation (Table 7). It is highly likely that conditions in the unfilled portions of Pigeonroost Branch and Oldhouse Branch will follow this pattern of genus-level extirpation if valley fills are constructed in those waters as currently authorized. See Appendix 1 for more details on O/E. and model development.

Table 7. Summary of WV O/E null model results for the Spruce No. 1 Project area. The biological impairment threshold is 0.64 (corresponding to the 5th percentile of WVDEP reference site distributions). An O/E score of ~1.0 means that the number of Observed native taxa is equivalent to the Expected number of native taxa. SD = standard deviation.

Table 7			
		Mean (SD) O/E	
	Spruce No. 1	Dal-Tex	
	Pigeonroost, Oldhouse, White Oak	Beech, LF Beech	Rockhouse
Spring	0.98 (0.20); n=9	0.26 (0.06); n=5	0.31 (0.10); n=3
Summer	0.85 (0.15); n=2	0.32 (0.08); n=2	0.38 (0.08); n=2
<ul style="list-style-type: none"> • Adjacent mined sites include LF Beech, Beech, and Rockhouse • The highest O/E scores were recorded in Pigeonroost, Oldhouse, and White Oak (each scored 1.18) • The lowest O/E scores were recorded in Beech and LF Beech on Dal-Tex (each scored 0.20) 			
Based on WVDEP Mountain reference sites, on average:			
<ul style="list-style-type: none"> • Spruce No. 1 samples are missing ~2% of expected taxa in Spring, and ~15% in Summer • Dal-Tex sites are missing ~74% of expected taxa in Spring, and ~68% in Summer.¹⁷ • SD for Spruce No. 1 streams had similar or better precision (SD) to the WVDEP reference model • SD for Dal-Tex was very low indicating that all observations consistently show missing taxa 			

iii. Comparison of WVSCI scores

States routinely use macroinvertebrate assemblage data to assess compliance with their narrative water quality standards and to determine support of aquatic life. For the past several cycles of Section 303(d) lists of impaired waters, WVDEP has used a family-level multi metric index called the WV Stream Condition Index or WVSCI. The WVSCI uses six (6) component metrics to summarize and analyze family-level macroinvertebrate taxa lists. The six metrics are total number of EPT (Ephemeroptera, Plecoptera and Trichoptera or mayflies, stoneflies and caddisflies) taxa, total number of taxa, percent of organisms that are EPT, percent of organisms that are Chironomidae (midges), the percent of organisms in the top two dominant taxa, and the Hilsenhoff Biotic Index. All metrics are computed at the family-level with a 200 fixed count subsample. The metrics are scored against Best Standard Values (BSVs) for the entire dataset, as a percent of the BSV and normalized to a score of 100. The average of all six metrics makes up the final WVSCI score. Simply put, the lower the score, the more degraded the macroinvertebrate assemblage. For more information on the WVSCI, go to http://www.wvdep.org/Docs/536_WV-Index.pdf.

¹⁷ Based on EPA data (Pond et al. 2008), all mined sites lost 47% of expected taxa, on average.

Examination of the West Virginia dataset has shown that the family-level metrics used by WVDEP generally underestimate degradation of the macroinvertebrate community impairment of aquatic life uses as compared to more sensitive genus-level indices due to the coarse level of taxonomy. Despite this lower sensitivity, bioassessments using WVSCI have documented adverse impacts to aquatic life due to mining in streams on mined sites near the project area

EPA sampled several streams within the Spruce Fork watershed for the Mountaintop Mining/Valley Fill Programmatic Environmental Impact Study (PEIS) (Green et al. 2000; Bryant et al. 2002). These assessments indicate that the unmined streams within and near the project area, including White Oak Branch, Oldhouse Branch and Pigeonroost Branch were high quality streams that fully support the aquatic life use, based on the family-level WVSCI and water quality data (see Appendix 1 and 2). The streams located in the historically MTM/VF mined areas located nearby (Rockhouse Branch, Beech Creek, and the Left Fork of Beech Creek) had WVSCI scores that would indicate they did not fully support aquatic life. These EPA data indicate that the aquatic life in streams on the project area (i.e., Oldhouse Branch and Pigeonroost Branch) would be likely degraded to the conditions exhibited in the Beech Creek and Rockhouse sub-watersheds after they are mined.

WVDEP data and assessments confirm that the aquatic life is adversely impacted not only in the nearby mined streams, but further downstream, on the mainstem of Spruce Fork, Pond Fork and the Little Coal River (see Appendix 1). The adverse impacts in the mainstem of Spruce Fork, Pond Fork, and the Little Coal are likely due to a combination of stressors, including mining and residential stressors. (WVDEP 1997).

Construction of valley fills, sediment ponds, and other discharges into Pigeonroost Branch and Oldhouse Branch as authorized by the DA Permit No. would be likely to export additional contaminants (conductivity) to Spruce Fork. Due to the sensitivity of native macroinvertebrate wildlife to elevated and increasing levels of conductivity, these contaminants are likely to hinder the maintenance or recovery of these biological communities.

b. Salamanders

As stated above, the ecoregion where the Spruce No. 1 project is located has one of the richest salamander fauna in the world. Impacts from the activities authorized as part of the project will have a significant adverse impact on this wildlife group located within the project area. Based on literature values (Williams 2002) for mean densities within reference reaches of Pigeonroost Branch, Bend Branch (another tributary of Spruce Fork), and Ash Fork (a tributary of Gauley River) and a 2004 USFWS study in White Oak Branch, EPA estimates aquatic salamander density in Pigeonroost Branch and Oldhouse Branch at ~5-6 per square meter along stream channels. Approximately seven acres of stream channel would be filled in Pigeonroost Branch and Oldhouse Branch by the project as currently authorized which means that more than 200,000 stream-dwelling

salamanders would be buried by the currently authorized valley fills. It is not expected that stream salamanders will return to the site due to the burial of their existing habitat and the inadequacy of proposed mitigation to replace the habitat required by these wildlife. Gingerich (2009) found no expected stream salamanders inhabiting 3-20 yrs old sediment ditches (5 out of 5 mines) on West Virginia MTM areas. Furthermore the USFWS has indicated that, to its knowledge, it has not been demonstrated that salamanders return to surface-mined areas and achieve densities similar to those that occurred prior to mining.

Since salamanders represent the main vertebrate predator in these headwater streams, and will be eradicated under the project, EPA believes that a key component of the aquatic food web would be likely to be lost from the aquatic ecosystem within Pigeonroost Branch and Oldhouse Branch portions of the Spruce No. 1 mine area.

According to the USFWS, adverse impacts to salamanders as a result of construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch will not be localized to the area to be filled. Because construction of the valley fills and other discharges are very likely to increase conductivity and selenium levels in the downstream receiving waters (See Section V.B.1 above), salamanders that are not directly buried and killed beneath the fills are also likely to be impacted; directly via exposure to these contaminants and perhaps indirectly via impacts of contaminants on food sources. (Patnode, et al. 2005) Such impacts are likely to occur as far downstream as elevated conductivity, selenium or other contaminants persist, and to affect any salamanders that spend some part of their life in the aquatic environment or in immediately adjacent riparian terrestrial habitats. These impacts would likely be exacerbated by the loss of fresh water dilution from Pigeonroost and Old House Branch.

USFWS also indicated that while range-wide populations of common species may not be significantly impacted, the salamander communities in individual headwater systems behave essentially as isolated populations because there is limited interaction (immigration and emigration) with communities in adjacent watersheds (Dr. Thomas Pauley, Marshall University and personal communication with Jim Zelenak USFWS WV Field Office). Therefore, the populations within the watersheds that will be impacted by fill (the footprints of the valley fills and the downstream toxicity in the form of elevated conductivity, selenium, and potentially other contaminants), and are very likely to be significantly impacted.

Furthermore, as set forth in Section V.B.2.c.i. below, construction of valley fills and other discharges into Pigeonroost Branch and Oldhouse Branch has the potential to contribute to conditions that would support blooms of golden algae (*Prymnesium parvum*), which can produce a toxin that is highly toxic to aquatic life and was associated with an extensive aquatic life kill of both fish and lungless salamanders in Dunkard Creek in West Virginia in September 2009.

c. Fish

As described in Section IV.B.3. above, the fish assemblages in Pigeonroost Branch and Oldhouse Branch are typical of headwater streams, containing only a few species. The fish assemblages in Spruce Fork are in relatively good condition. While some studies have documented adverse impacts to fish communities associated with surface coal mining, based on the fish community in Spruce Fork downstream of the Dal-Tex operation, it appears that the fish within Spruce Fork are fairly tolerant of increases in conductivity and total dissolved solids. Nevertheless, increases in conductivity and total dissolved solids and construction of sediment ponds associated with valley fills authorized in Pigeonroost Branch and Oldhouse Branch will create conditions considered favorable to the growth of golden algae (*Prymnesium parvum*), which has caused large aquatic life kills. Fish also would be likely to be exposed to increases in selenium concentrations, which could lead to bioaccumulation in fish tissues and to reproductive effects (see Section V.B.1.a. above). Because of the potential to promote the growth of golden algae and because of the likely increased exposure to selenium, Region III concludes that construction of valley fills in Pigeonroost Branch and Oldhouse Branch would be likely to have an adverse effect on the fish population in those waters and in Spruce Fork.

i. Potential to promote growth of golden algae

Construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch as currently authorized are likely to contribute to instream conditions in or near Spruce Fork that may support the growth of golden algae (*Prymnesium parvum*), which releases toxins that kill fish and other gill-breathing aquatic organisms. *P. parvum* is a haptophyte (flagellated) algae now distributed worldwide. This algae has been known to North America since the 1980's (Baker et al., 2007) and has since become established in many Texas and Oklahoma rivers and reservoirs. *P. parvum* is responsible for Harmful Algal Blooms (HAB's) that have killed millions of fish in Texas and Oklahoma, and has been implicated in kills from North Carolina to Arizona.

P. parvum has also been associated with an extensive and severe aquatic life kill, which destroyed thousands of fish, mussels and other aquatic life in Dunkard Creek, West Virginia and Pennsylvania in September 2009. At the time of the Dunkard Creek aquatic life kill, biologists reported observations of thousands of dead fish, mussels and salamanders. Mud puppies (an aquatic salamander that lives its entire life underwater) crawled out of the water and onto rocks and the shoreline in an attempt to escape from the toxic water. Field biologists observed numerous individuals as dried up carcasses on rocks and along the shoreline. Fish were observed avoiding the mainstem of Dunkard Creek by practically "stacking -up" in the mouths of tributaries, subjecting themselves to feeding by blue heron rather than remaining in the toxic water of mainstem Dunkard Creek. The identification of *P. parvum* in 2009 in Dunkard Creek was the first identification of this invasive aquatic species in the Mid-Atlantic States.

The factors that are most closely associated with supporting growth of *P. parvum* are believed to be:

1. Proximity to a known source of *Prymnesium parvum*.
2. TDS in high enough amounts to support *P. parvum* (estimated to be between 500 and 1000 mg/L (conductivity 714-1428 μ S/cm).
3. Nutrients of great enough amount to initiate a bloom of *P. parvum*
4. pH greater than 6.5. Risk increases with increasing pH.

Areas of habitat that are pooled (large beaver dams, natural residual pools, or manmade ponds)

EPA believes that the Spruce No. 1 project is likely to increase the likelihood that all five factors are met within the Spruce Fork sub-watershed, as outlined below.

1) Proximity to Known Source: *P. parvum* was identified (in very high numbers) in Cabin Creek of the Kanawha drainage, only 25 miles over the ridge to the East. Because this algae can easily move with waterfowl, the risk of introducing *P. parvum* in the Spruce Fork drainage is high.

Although not currently found in Spruce Fork, WVDEP has identified Spruce Fork as a “water of concern” because of its potential (due to already high levels of TDS/conductivity) to support *P. parvum* blooms consistent with the factors shown above.

2) High TDS: The lower TDS limits for the growth of *P. parvum* appears to be ~500 mg/l TDS, or ~700 μ S/cm conductivity for the ion mixtures typical of alkaline mine drainage. Recent data indicate that growth of *P. parvum* increases 2-3 fold when conductivity increases from 500 μ S/cm to 1000 μ S/cm (unpublished data, WVDEP, 2010). The waters draining the nearby Dal-Tex Mine operation have conductivity levels greater than these values. Many of the sampling sites on the mainstem of Spruce Fork, Pond Fork and the Little Coal River also have conductivity levels exceeding these endpoints. Other waters of concern near the Spruce No. 1 project include the Little Coal River and West Fork/Pond Fork

As described in Section V.A, construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch would be likely to increase levels of TDS/conductivity in Spruce Fork, thus creating conditions more favorable to *P. parvum*.

In addition, DA Permit No. 199800436-3 (Section 10: Coal River) authorizes construction of numerous sedimentation ponds in Pigeonroost Branch and Oldhouse Branch. These will create areas of pooled habitat more favorable to *P. parvum*. During low flows, when conductivity is highest, flow is lowest, increasing the possibility that blooms could occur in very slow moving residual pools within the channel.

3) *Suitable Nutrient Levels*: Nutrients in the Spruce Fork are of similar availability to Dunkard Creek and other watersheds with *P. parvum* algae present (e.g. Whitely Creek, PA). Phosphorous in Spruce Fork was over 100 µg/L on two sampling occasions during the PEIS.

4) *High pH*: Discharges from Spruce No. 1 are likely to be alkaline, consistent with pH of discharges from Dal-Tex and other operations, etc. etc.

5) *Existence of Pooled Habitats*: Pooled habitats with little to no flow are common in streams like Spruce Fork in low flow conditions of September and October, when TDS is highest.

ii. Increased exposure to selenium

As set forth in Section V.B.1.a, construction of valley fills and other discharges authorized by the DA Permit into Pigeonroost Branch and Oldhouse Branch would be likely to result in elevated levels of selenium in receiving waters. While selenium is a naturally occurring chemical element that is an essential micronutrient, excessive amounts of selenium can also have toxic effects on fish. Selenium toxicity is primarily manifested as reproductive impairment and birth defects due to maternal transfer, resulting in embryotoxicity and teratogenicity in egg-laying vertebrates (e.g. fish and ducks). The most sensitive toxicity endpoints in fish larvae are teratogenic deformities such as skeletal, craniofacial, and fin deformities, and various forms of edema. Embryo mortality and severe development abnormalities can result in impaired recruitment of individuals into populations (Chapman et al. 2009). A WV draft study indicates that elevated selenium concentrations in fish eggs, increased larval deformity rates and increased deformity rates in mature fish are occurring in the Mud River Reservoir, Boone County, WV due to mining activities. These adverse conditions were all associated with elevated water column selenium concentrations (WVDEP, 2009, draft).

In summary, construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch would likely result in increased instream levels of selenium that can have toxic effects on fish.

iii. Other potential impacts to fish

A number of studies have documented adverse impacts to fish communities associated with surface coal mining. It is important to consider basin size when assessing the potential effects of valley fills because small streams (less than 10 km²) have shown effects to the fish assemblage while larger streams have not (e.g., Fulk et al. 2003). As noted by Fulk et al. (2003) using fish indices like the Mid-Atlantic Highlands Index of Biotic Integrity (MAHA IBI) of McCormick et al. (2001) is problematic in small streams that are species depauperate (limited diversity) because the index is greatly affected by the addition or subtraction of one or two individuals of a different species. Nevertheless, Fulk et al. did analyze small streams in their report and found significant differences in

total IBI scores between mined and unmined streams. This difference was attributed to changes in cyprinid species richness and the percent of the assemblage composed of benthic invertivores. There was no significant difference in percent cottids (sculpin).

Some studies have shown that mountaintop mining for coal and construction of valley fills has had a harmful effect on the composition of stream fish communities (Fulk et al., 2003, Stauffer and Ferreri, 2002). Comparison of streams without mining in the watershed and sites downstream of valley fills in Kentucky and West Virginia indicate that streams affected by mining had significantly fewer total fish species and fewer benthic fish species than streams without mining in the same areas (Stauffer and Ferreri, 2002).

Fulk et al. (2003) used the Mid-Atlantic Highlands Index of Biotic Integrity (IBI - a multi-metric index used to assess biotic health) to analyze fish data from 27 streams in West Virginia. In their study, Fulk et al. (2003) classified streams (no mining in the watershed, mountaintop mining in the watershed, sites downstream of valley fills, and sites with both mining and residential development in the watershed) and compared fish assemblage health among stream classes. The study showed that assessment scores from the sites downstream of valley fills were significantly lower than scores from sites without mining in the watershed, indicating that fish communities were degraded in sites downstream of valley fills. Sites with residences in addition to mining, however, scored similarly to the unmined sites.

Sites that were sampled in Spruce Fork for the PEIS were classified as “filled with residences.” Sampling data in the Spruce Fork sub-watershed downstream of the Dal-Tex operation scores similarly to filled residential sites in the PEIS. There is no difference between filled residential sites and unmined sites in the PEIS.

In summary, there remains the potential that construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) into Pigeonroost Branch and Oldhouse Branch have the potential to promote the growth of golden algae and increase exposure to selenium. For these reasons, Region III concludes that construction of valley fills and other discharges authorized into Pigeonroost Branch and Oldhouse Branch would be likely to have an adverse effect on the fish population in those waters and in Spruce Fork.

d. Water-dependent birds

Loss of headwater streams from the project would be likely to impact water dependent birds, such as the Louisiana waterthrush, that require forested headwater streams for foraging on insects and nesting by elimination of the headwater areas associated with Pigeonroost Branch and Oldhouse Branch.

The Louisiana waterthrush has been designated by USFWS as a Bird of Conservation Concern (BCC) within the Appalachian Mountains Bird Conservation Region (AMBCR) that may be impacted by Mountaintop Mining – Valley Fills (MTM-VF).

According to USFWS, the Louisiana waterthrush is an area-sensitive riparian-obligate species that nests and forages along headwater streams of intact interior forests; it relies for breeding success on the diverse and productive assemblage of aquatic insects supported by healthy headwater systems (Mattson et al. 2009). Studies indicate that breeding territory density and occupancy were reduced along streams where benthic macroinvertebrate communities had been degraded due to anthropogenic land uses and acidification. Lower breeding territory densities occurred along streams impacted by acid mine drainage more so than along circumneutral streams. Similarly, some indices of benthic macroinvertebrate integrity were higher where breeding Louisiana waterthrushes were present than areas from which they were absent. Stream reaches where breeding birds were detected had a greater proportion of pollution-sensitive benthic macroinvertebrates than reaches where they were not detected supporting the concept that good water quality is a key component of the species breeding habitat.¹⁸ Management for this species has focused on protecting core wooded riparian habitat, including establishment of undisturbed riparian forest cover, and preservation and improvement of water quality to ensure aquatic insect biomass and diversity.

For water-dependent wildlife, like the Louisiana waterthrush, preservation of large tracts of forest containing headwater streams is needed for the conservation of this species in the central Appalachians. The waterthrush is particularly vulnerable to degradation of water quality and aquatic insect communities (Mattsson and Cooper 2006, Mulvihill et al. 2008).

3. Summary

In summary, construction of valley fills, sedimentation ponds, and other discharges authorized by DA Permit No. 199800436-3 (Section 10: Coal River) to Pigeonroost Branch and Oldhouse Branch would eliminate headwater stream systems that support some of the last remaining least-degraded conditions within the Coal River sub-basin, destroy (through burial) diverse and healthy wildlife communities and habitat within those headwater stream systems. In addition, the discharges would likely convert previously healthy, functioning headwater streams into sources of contaminants to downstream waters that would likely adversely affect wildlife in those downstream waters. These impacts likely will cause significant degradation of the Nation's waters as described in 40 C.F.R. 230.10(c), particularly within the context of the mine-impacted Coal River sub-basin and Spruce Fork sub-watershed. As set forth in Section V.C.

¹⁸ In addition to stream pollution from anthropogenic land uses, elevated predator numbers from landscape-scale forest fragmentation and the loss of riparian forest canopy could also negatively impact future population levels of the Louisiana waterthrush. Ongoing impacts associated with landscape disturbances, including defoliation, increased stream temperatures, and compositional shifts in benthic macroinvertebrate communities, also could reduce populations in the AMBCR. Therefore, measures of Louisiana waterthrush distribution and reproduction may be useful indicators of both stream and forest ecosystem integrity.

below, Region III has determined that the compensatory mitigation plan for this project would be unlikely to compensate adequately for the impacted resources or to reduce the impacts described above to an acceptable level.

C. Mitigation is not likely to offset anticipated impacts

The Section 404(b)(1) Guidelines require that the permit authorize only the least environmentally damaging practicable alternative. 40 C.F.R. 230.10(a). In addition, no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. 40 C.F.R. 230.10(d). Thus, impacts must be first avoided and then minimized. It is only after practicable and appropriate steps have been taken to avoid and minimize impacts that compensatory mitigation to offset unavoidable adverse impacts to aquatic resources authorized by Clean Water Act Section 404 permits and other Department of the Army (DA) permits may be considered.

Analysis by Region III indicates that there appear to be alternative configurations that would avoid much of the discharges to Pigeonroost Branch and Oldhouse Branch. Because the scope of this Recommended Determination is limited to withdrawal of specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material in connection with the Spruce No. 1 Mine, Region III takes no position at this time as to whether the alternatives that Region III has identified would be likely to result in acceptable or unacceptable effects on wildlife or satisfy the Section 404(b)(1) Guidelines.

If constructed as authorized the Spruce No. 1 Mine will result in direct impacts (through discharge of dredged and/or fill material) to approximately 35,368 linear feet (about 6.6 miles) of stream in Pigeonroost Branch and Oldhouse Branch. The impacts from these discharges are discussed in Sections V.A. & V.B. above.

While Region III recognizes that the project includes mitigation efforts (including stream creation and enhancement of existing streams) to compensate for unavoidable adverse impacts, Region III is concerned that known compensatory mitigation techniques would be unlikely to replace the high quality resources in Pigeonroost Branch and Oldhouse Branch. Additionally, Region III believes that the current mitigation plan does not adequately account for the quality and function of the impacted resources.

The Compensatory Mitigation Plan (CMP) submitted by Mingo Logan describes on-site and off-site, in-kind mitigation. On-site compensation would include the restoration of 7,132 linear feet of stream segments temporarily impacted by the sedimentation ponds, and the creation of 43,565 linear feet of on-bench stream channel within the project area. Off-site compensation includes stream enhancements to Spruce Fork and Rockhouse Creek through a combination of physical, aquatic habitat, and stream stabilization improvements. Finally, the CMP proposes to direct surface water flow from the project area in existing drainage ways to promote the development of more defined channels, thus creating 26,625 linear feet of streams.

Both EPA and the USFWS have regularly identified problems with the mitigation techniques that are part of the CMP for the Spruce No. 1 Mine. Region III's comments on the 2006 draft and final EISs for the Spruce No. 1 Mine expressed concern that the compensatory mitigation plan did not fully mitigate all adverse impacts and was inadequate in terms of its lack of functional assessment and concerns whether headwater stream creation would in fact replace impacted resources. Region III emphasized the importance of headwater stream functions that would be lost and likely not replaced, particularly by conversions of existing drainageways to streams as described in the CMP. In their December 4, 2001, letter the USFWS expressed similar concerns that the proposed mitigation was unlikely "to provide sufficient mitigation for permanent stream and riparian habitat loss and for the losses of the functions and values of the stream to aquatic species in the fill footprint and to the downstream ecosystem."

As discussed below, the project fails to include all appropriate and practicable steps to minimize and compensate for the project's adverse impacts on the aquatic ecosystem as required by 40 CFR 230.10(d). Further, EPA Region III believes that the anticipated level of adverse impacts associated with the Spruce No. 1 Mine will not be adequately offset by the required compensatory mitigation.

1. Proposed mitigation likely will not replace high quality resources in Pigeonroost Branch and Oldhouse Branch

There is no evidence in the peer-reviewed literature that the type of stream creation included in the CMP will successfully replace lost biological function and comparable stream chemistry to high quality stream resources, such as Pigeonroost Branch and Oldhouse Branch. Studies have demonstrated that replacement of streams is among the most difficult and frequently unsuccessful forms of mitigation. Even if stream structure and hydrology can be replaced, it is not clear that replacing structure and hydrology will result in true replacement of functions, especially the native aquatic community and headwater functions. Based upon these studies, the Corps and EPA have stated:

"We recognize that the scientific literature regarding the issue of stream establishment and re-establishment is limited and that some past projects have had limited success (Bernhardt and others 2007). Accordingly, we have added a new paragraph at 33 CFR 332.3(e) (3) [40 CFR 230.93(e) (3)] that specifically notes that there are some aquatic resources types that are difficult to replace and streams are included among these. It emphasizes the need to avoid and minimize impacts to these 'difficult-to-replace' resources and requires that any compensation be provided by in-kind preservation, rehabilitation, or enhancement to the extent practicable. This language is intended to discourage stream establishment and re-establishment projects while still requiring compensation for unavoidable stream impacts in the form of stream corridor restoration (via rehabilitation), enhancement, and preservation projects, where practicable."¹⁹

¹⁹ EPA recognizes that the effective date of the regulations governing compensatory mitigation that were promulgated at 73 Fed. Reg. 19594 (April 10, 2008) is June 9, 2008, and therefore those regulations do not

Furthermore, the USFWS frequently has stated that, “we continue to believe that it is not possible to fully replace the critical aquatic and terrestrial ecosystem functions of healthy headwater streams,” and that USFWS “is not aware of any scientific support for the concept that . . . ditches can be considered biologically equivalent to, or even rough approximations of, flowing streams.”

The streams of Pigeonroost and Oldhouse Branch have been shown to exhibit high water quality and high functioning capacity. Given the difficulty of stream re-establishment to mitigate for impacts to streams in general, Region III believes it is even more unlikely that high value streams such as these can be replaced by on-site stream creation techniques involving conversion of sediment ditches. EPA Region III believes that the mitigation for the Spruce No. 1 project is unlikely to offset the anticipated impacts to an acceptable level.

2. The compensatory mitigation plan is based upon a misclassification of the impacted resources

The starting point for an adequate compensatory mitigation plan is accurate characterization of the impacted resources. Region III believes that the compensatory mitigation plan is based upon a misclassification of impacts to perennial and intermittent streams, thereby resulting in an insufficient baseline from which to design adequate stream compensation.

Overall, through onsite visits and biological data collection, Region III conservatively estimates that, within the mine footprints of Right Fork Seng Camp, Pigeonroost, and Oldhouse Branch, over five miles of stream (~27,000 feet) are perennial. This is in contrast to the DA Permit estimation of 165 feet of perennial waters within the entire project area. This misclassification has a critical impact upon the type of mitigation that would be required to offset these impacts. The resource type plays an important role in the types of expected aquatic communities, the degree in which each resource provides structure and function, and the amount of organic matter and nutrients (and contaminants) ultimately retained or loaded to receiving streams. This misclassification means that the compensatory mitigation plan does not properly account for, and therefore would not offset the full range of adverse impacts related to the project. A more detailed description of EPA’s analysis of stream type is described in Appendix 3.

3. The compensatory mitigation plan lacks an adequate functional assessment

apply to DA Permit No. 199800436-3 (Section 10: Coal River). Nevertheless, the above-quoted statement, taken from the preamble to those regulations, summarizes scientific research and literature that is applicable to consideration of the likely efficacy of the compensatory mitigation proposed for the Spruce No. 1 Mine.

In addition to being based on a misclassification of resource type, the CMP also is based upon an inadequate functional assessment of the impacted resources. Compensatory mitigation must replace the aquatic resource function lost or adversely affected by authorized activities. Therefore, to ensure that the functions are being replaced, the compensatory mitigation must create/restore streams that are capable of sustaining comparable biological, communities and chemical and physical characteristics of the streams that have been eliminated by the mining activity.

The CMP utilized an assessment method referred to as the Stream Habitat Unit (SHU) method to calculate mitigation debits and credits. This assessment entails a combination of linear lengths of impact, habitat assessment scores, and stream hydrological status²⁰. The SHU as presented in the CMP only accounts for the physical aspects of stream condition and fails to account for the interrelationship of water chemistry and biological resources in stream functioning.

The USFWS expressed this concern in regard to the CMP:

“The Stream Habitat Unit (SHU) assessment methodology selected by the applicant only considers the physical characteristics of the stream. It does not include biological or chemical characteristics of the stream. Without those attributes, the assessment does not meet the requirements of a “functional” assessment. The Service recommends that the applicant use an assessment method that incorporates biological and chemical, as well as habitat, characteristics to determine the true function of the stream.”

The basis for the SHU as presented by the CMP is based on the premise that stream habitat (HAV as scored by EPA’s RBP Habitat Assessment) accounts for the total ecological “currency” at the site. This premise has been demonstrated to be flawed. Studies (for example, Fritz et al., 2010) have found no correlation between functional measurements and RBP Habitat Assessments. More importantly, there was no use of existing water chemistry or biological resource measurements factored into the SHU’s ecological currency of the sites. This shortcoming underscores the need for a more thorough investigation of impacts and mitigation offsets.

Since the permittee applied the SHU methodology, which has no functional component, to describe the streams, the compensatory mitigation plan only addresses the physical elements of the streams. As a result of this EPA believes the current CMP does not adequately account for or replace the functional components of the lost streams. Region III does not believe that increased ratios of intermittent or ephemeral streams offsets this inadequacy. While DA Permit No. 199800436-3 (Section 10: Coal River) refers to biological success criteria, the permit terms do not clearly require the replacement of lost

²⁰ Even though the Corps did not finally rely solely on the SHU for mitigation requirements, the Corps did not categorically prevent the permittee from using this approach as a basis for its mitigation plan, and thereby allowing Mingo Logan to use this approach to help justify their mitigation performance and success criteria *a*.

biological function and comparable stream chemistry to meet adequate compensatory mitigation success criteria.

4. Conversion of erosion control channels would be unlikely to successfully replace the impacted resources

Based on observations of other on-bench SMCRA drainage or erosion control ditches (Kirk 1999; Green et al. 2000, and Gingerich 2009), the CMP's proposed conversion of these ditches is unlikely to successfully replace the impacted resources, alone or in concert with other proposed mitigation contained in the CMP. Over 50% of the linear stream length in the Spruce mitigation plan relies on conversion of on-bench SMCRA drainage or control ditches. On-bench sediment ditches are a consequence of SMCRA-required Best Management Practices (BMPs) to control runoff. Data show that water quality in these types of sediment ditches in the MTM region is typically highly degraded as a result of water in these ditches percolating through mine spoil. Even when the sediment ditches are enhanced for benthic substrata and riparian vegetation, such as through adding boulder clusters every 500-1000 feet, resulting water quality will likely be so degraded that the ditches will not meet or exceed pre-mining water chemistry baselines.

As described previously, degraded water chemistry (such as the addition of conductivity and selenium as a result of water percolation through mine spoil) typically results in degraded biological communities. As a result of this degraded water chemistry, these created waterbodies would be unlikely to support the healthy and diverse biological communities that they are intended to replace. These created streams would be considered degraded and would be unlikely to successfully replace Pigeonroost Branch and Oldhouse Branch as sources of freshwater dilution and healthy biological communities and function, either alone or in concert with other proposed mitigation contained in the CMP.

A more detailed discussion of on-bench sediment ditches for mitigation is provided in Appendix 3.

5. The CMP does not account for the loss of ecological services of headwater streams

Another compelling problem with the Spruce No. 1 CMP is the separation of the ecological elements into single, separate aspects of the ecology with limited treatment of the interconnectedness of the entire ecosystem. The forested slopes and coves located within the Spruce No. 1 project area are drained by a dendritic mosaic of ephemeral, intermittent and perennial headwater streams and water courses. The watershed is inextricably linked with the stream system that drains it. The overwhelming bulk of the organic matter that sustains the stream biota in Spruce Fork is a function of the upstream environment.

In a pre-mined condition receiving streams are recipients of allochthonous (i.e., material originating from outside of the stream system) material and water inputs (i.e., surface, subsurface and groundwater) from the surrounding forested communities. The post-mined environment, however, creates severely altered conditions in stream courses that are not destroyed by valley fills. Those alterations include:

- a. Elimination of water and processed organic material from former upstream tributaries that will be under valley fills.
- b. Altered contributions of water and allochthonous material from the surrounding upland watershed. This is due to the altered character of the soil and vegetation communities in a post-mine environment.
- c. Altered hydrograph with new flow regimes that markedly depart from that under which the streams have evolved.
- d. Altered timing, temperature and chemical composition of post-mine discharges of water to receiving streams.

Mountaintop mining and associated valley fills profoundly alter the contributing watershed. Effectively the new landscape widely departs from that within which the stream network has evolved. The subsequent ecosystem is an entirely new system. Assumptions that much of the structure and function of the pre-mined conditions can be recaptured with mitigation are very optimistic and highly speculative.

In summary, Region III believes that it is unlikely that the adverse impacts associated with the Spruce No. 1 project as authorized would be offset by the mitigation described in the CMP.

D. Summary

In summary, Region III believes that Spruce No. 1 Mine would eliminate the entire suite of important physical, chemical and biological functions provided by the streams of Pigeonroost Branch and Oldhouse Branch including maintenance of biologically diverse wildlife habitat. Region III maintains that impacts to these functions at the scale associated with this project will result in significant degradation (40 CFR 230.10(c)) of the Nation's waters, particularly in light of the extensive historic stream losses in the Spruce Fork and Coal River watersheds. Region III does not believe the potential impacts of these stream resources can be adequately mitigated to reduce the impacts to an acceptable level by the compensatory mitigation described in the CMP.

VI. Other Considerations

As set forth above, Region III has determined that the impacts from the discharges to Pigeonroost Branch and Oldhouse Branch as authorized by DA Permit No. 199800436-3 (Section 10: Coal River) described in Section V would be likely to have an unacceptable

adverse effect on wildlife that will not be offset by the compensatory mitigation plan. This section identifies other, additional considerations that are of concern to the Region but are not part of the basis for our conclusion that the impacts would be likely to have an unacceptable adverse effect.

A. Impacts From Activities Dependent Upon Specification of Pigeonroost Branch and Oldhouse Branch as Disposal Sites for the Construction of Valley Fills and Sedimentation Ponds for the Spruce No. 1 Mine

To the extent that discharge of excess spoil to areas outside jurisdictional waters and other mining-related activities, such as deforestation, necessarily depend upon specification of Pigeonroost Branch and Oldhouse Branch for construction of valley fills and sedimentation ponds for the Spruce No. 1 Mine, Region III has considered those impacts.

1. Migratory Birds

Approximately 2,278 acres of deciduous forests will be destroyed by the Spruce No. 1 Mine. Among the many migratory birds likely to breed in the project area, there are six species that the USFWS has designated as Birds of Conservation Concern within the Appalachian Mountains Bird Conservation Region that may be impacted by Mountaintop Mining – Valley Fills. These include the cerulean, Kentucky, Swainson’s and worm-eating warblers, the wood thrush, and the Louisiana waterthrush. The water-dependent Louisiana waterthrush was discussed in Section V.B.2.d above. The other five avian species are also designated as BCC species within the USFWS’s Northeast Region as a whole and nationally (U.S. Fish and Wildlife Service 2008). The first four are also considered to be among the 100 most at-risk bird species in North America (Wells 2007).

Cerulean and worm-eating warblers are also both area-sensitive species that rely on large blocks of intact, mature, interior forest habitats to support productive breeding populations. The cerulean warbler breeding population is thought to have declined by about 75% over the past 45 years – the most dramatic decline of any North American warbler monitored by the Breeding Bird Survey (Sauer et al. 2005). Both species are threatened by the loss and fragmentation of these habitats (U.S. Fish and Wildlife Service 2007, Wells 2007). Deforestation associated the Spruce No. 1 Mine may adversely impact their breeding populations (Weakland and Wood 2005, Wells 2007).

The project also could impact other bird species that rely on mature forest habitats. Bird species that rely on mature forest habitats that are abundant in the Appalachian region are Kentucky warblers in the understory; and wood thrush, Swainson’s warbler, Acadian flycatcher, and ovenbirds in mesic hardwoods. These and many other avian species are all impacted by forest fragmentation and habitat loss, such as that which would occur in connection with the Spruce No. 1 mine. Spatial analyses of the effect of Appalachian mountaintop mining on interior forest indicate that the loss of interior forest is 1.75-5.0 times greater than the direct loss of forest due to mountaintop mining. Investigators

concluded that the loss of Appalachian interior forest is of global significance due to the rarity worldwide of large expanses of temperate deciduous forest.

The Spruce No. 1 Mine will impact mature forested habitat, over a substantial timeframe, replacing the impacted areas with reclaimed areas dominated by grasses and herbaceous species. Many reclaimed areas such as those expected at Spruce No. 1 show little or no regrowth of woody vegetation even after 15 years. The PEIS found significant differences in bird populations between forested and reclaimed sites, namely the loss of the above-mentioned species, and subsequent replacement by more opportunistic grassland species. Also, the loss of the healthy headwater areas of Spruce Fork will reduce the feeding and foraging areas available to specialist bird species in this ecoregion. This reduction in available habitat could potentially impact their viability in the Spruce Fork watershed and the larger ecoregion.

In recent communications with Region III (August 2010) in regards to EPA's Proposed Determination on the Spruce No. 1 Mine the USFWS indicated its belief that past selective logging in some parts of the project area would not preclude use of the site by forest interior species of migratory birds or that birds currently using the project area during the breeding season will be unaffected by the mine and associated valley fills. The USFWS evaluated the terrestrial habitats of the project area and concluded that construction of the mine was likely to impact migratory birds via the loss and fragmentation of forest habitat, decreasing habitat heterogeneity, increasing isolation of populations, and increasing exposure to nest predators and parasites (U.S. Fish and Wildlife Service 1998).

The USFWS expressed concerns specific to bird populations within the Coal River Sub-basin related to adverse impacts of the Spruce No. 1 Surface Mine. These concerns included ... "direct loss of habitat and direct and indirect loss of food resources, for forest interior and riparian-obligate species of migratory birds, including six species the Service considers Birds of Conservation Concern (i.e., cerulean, Kentucky, Swainson's, and worm-eating warblers; Louisiana waterthrush; wood thrush)" (USFWS, 2008).

The USFWS also continues to believe that construction of the Spruce No. 1 Surface Mine will adversely impact these and other forest-breeding migratory birds. The valley fills will result in the permanent loss of headwater streams that may be used by Louisiana waterthrushes. The USFWS indicates they are unaware of peer-reviewed research that suggests that these birds will simply relocate to an adjacent, unimpacted watershed and have comparable survival and reproductive success. The downstream increases in conductivity, selenium and perhaps other contaminants are also likely to adversely affect those waterthrushes not excluded by the direct impacts of the fill via impacts to their food base. In some freshwater food webs, selenium has bioaccumulated to four times the level considered toxic, which can expose birds to reproductive failure when they eat fish or insects with high selenium levels.

While the work of the Appalachian Regional Reforestation Initiative (ARRI) shows substantial promise for better reclamation of mined lands, it has not been demonstrated

that these reclaimed areas will generate and sustain forests that provide habitat characteristics and qualities comparable to those of native forest. For these reasons, the USFWS believes that construction of the Spruce No. 1 Surface Mine is likely to result in permanent and/or long-term loss of breeding habitats important to several migratory bird species of conservation concern.

2. Bats

Large-scale mountaintop removal/valley fill mining has been identified among the threats to bat species in the region according to information supplied to EPA by the USFWS. Loss of the bat's habitat, foraging areas, and food sources – in conjunction with recently identified concerns related to white-nose syndrome – may result in unacceptable adverse impacts to these wildlife resources.

As set forth in Section IV.B.5., it is possible that Indiana bats could occur in or near the project area, and that they could be impacted by the loss of forest habitat associated with the Spruce No. 1 Mine and by the loss of headwater streams, riparian areas and associated aquatic and terrestrial insects, as well as by the downstream degradation of these resources likely to be caused by the project.

In addition to Indiana bats, the USFWS was recently petitioned to list two other bat species, the eastern small-footed bat and northern long-eared bat, under the Endangered Species Act (Center for Biological Diversity 2010). Like Indiana bats, these two species are susceptible to population-level impacts from White Nose Syndrome (WNS), which has devastated some populations of eastern bats. Both species occur in the vicinity of the Spruce No. 1 Surface Mine, and both were captured during mist net surveys at the project site. Five eastern small-footed bats and 16 northern long-eared bats were captured during mist net surveys in 2004, representing 7.6 and 24.2 percent, respectively, of all bats captured (U.S. Army Corps of Engineers 2006, Appendix M). Given the rapid spread and potentially dramatic effects of WNS, the potential exists that even more bat species could decline to the point that listing under the ESA will be warranted.

If WNS affects West Virginia bats as it has bats in other states, and if large die-offs occur, it will further complicate the already complex challenge of conserving bat species. Previous mining and logging activities and forest loss have also been identified as having adverse affects on bat populations. Commonly used reclamation techniques, many of which are designed to minimize erosion and provide backfill stability, are incompatible with re-establishment of trees necessary for successful roosting by bats. Such reclamation techniques have the potential to further stress bat populations.

B. Environmental Justice Concerns

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. Executive Order 12898

directs: “To the greatest extent practicable...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...”

According to the 2000 United States Census, Spruce No. 1 is located in a census block group which contains 335 people. A census block group is a geographical unit used by the U.S. Census Bureau (Bureau) which is between a census tract and a census block in size and scale. It is the smallest geographical unit for which the Bureau publishes data. Census block groups generally contain between 600 and 3,000 people, with a target size of 1,500 people.

Spruce No. 1 is located in a census block group where the average per capita income is \$15,411. This is over \$6,000 less than the national average of \$21,587 and over \$1,000 less than the West Virginia state average of \$16,477. The average median family income is also almost \$13,000 less than the national average of \$52,029. Moreover, 24% of the residents of Logan County live below the poverty line which also exceeds state and national averages.

Region III notes that the Corps included a discussion of environmental justice in the Spruce No. 1 EIS, however, as noted in EPA's comment letters in June and October 2006, the Region III remains concerned that the Corps did not fully consider and address the potential for disproportionately high and adverse effects on this population. EPA's environmental justice analysis indicates that there may be a disproportionately high and adverse impact on the low income population affected by the mining activity. Additionally, EPA remains concerned that the local community did not have the necessary information, or the opportunity, to meaningfully participate in the EIS process. Specifically, EPA is concerned the community was not informed when changes were made to different aspects of the mine project during the permitting and EIS process and therefore was not able to meaningfully comment on the final aspects of the mine.

Consideration of these issues in the context of authorizing the significant disturbance associated with construction of valley fills associated with the Spruce No. 1 Mine should include a characterization of the status of residents near the site and the conditions they face including any effects relating to the proximity of the blasting zone, locations of discharges of fill material, truck traffic, noise, fugitive dust, and habitat loss. Information concerning sources of drinking water for the effected populations (including municipal water supplies and private sources of drinking water including streams and/or wells) also should be considered.

The cultural implications of mountain top mining also were not sufficiently considered. The mountains affected by Spruce No. 1 are viewed as a cultural resource by many residents. In many cases the mountains have helped define their society and influence their daily lives. For example, the mountain ridges of southern West Virginia have for over two centuries been viewed largely as a “commons,” where local residents have

gathered wild medicinal herbs such as American Ginseng (*Panax quinquefolius*) and Goldenseal (*Hydrastis Canadensis*). In many cases, collection of these wild herbs provide much needed extra income to local communities during times of unemployment or economic hardship (Baily 1999, Hufford, 1997). Removing these mountains may have profound cultural changes on the residents in the area so it is important that cultural impacts be considered as well.

It is important that consideration be given as to whether the types of impacts described above will extend over a broad area or will be concentrated in particular areas. Detailed maps outlining the residential areas in relation to these activities may help accomplish this. It is also important that the effects be considered both independently and cumulatively. Considering the effects cumulatively provides the most realistic “snapshot” of what the community will be facing when the project reaches fruition. Having this information readily available will help engage the affected communities during public outreach and ensure that they can be meaningfully involved.

EPA considers action pursuant to section 404(c) within the scope of the policy directive of Executive Order 12898. A section 404(c) action has the potential to affect human health or the environment of low-income or minority populations. Accordingly, EPA includes environmental justice concerns when undertaking an action pursuant to section 404(c). In this case, Region III conducted a public hearing on May 18, 2010 and received comments both orally and in writing. Region III has considered that members of the community expressed concern about loss of jobs and tax revenue (supporting local communities and schools) in the event that EPA's Section 404(c) action would preclude any activities currently authorized at the Spruce No. 1 Mine. At the same time, Region III also has considered that members of the community have expressed concern regarding the adverse environmental and cultural aspects of the project described above. EPA also has received a petition from a variety of stakeholders raising concerns related to environmental justice issues associated with mountaintop mining.

In order to satisfy Executive Order 12898, EPA has considered whether there is a “...disproportionately high and adverse human health or environmental effects...” from its regulatory action. The scope of the inquiry for purposes of EPA's environmental justice analysis is directly tied to the scope of the regulatory action that EPA is taking. In the context of a Clean Water Act Section 404(c) action, EPA is authorized to prohibit, restrict, or deny specification (or withdraw specification) of the discharge of dredged or fill material at defined sites in waters of the United States whenever it determines that use of such sites for disposal would have an unacceptable adverse impact on “municipal water supplies, shellfish beds, fishery areas (including spawning and breeding areas), wildlife, or recreational areas.”

Accordingly, EPA has considered its environmental justice analysis in the context of this Recommended Determination under Section 404(c) action the potential effects prohibiting the discharge will have on the municipal water supplies, shellfish beds, fishery areas, wildlife and recreational areas (i.e., 404(c) resources) of the project site. EPA also considered whether those effects, if any, of EPA's 404(c) action on the 404(c)

resources will have a “disproportionately high and adverse human health or environmental [effect]” on “minority populations and low-income populations” of the project area.

EPA concludes, to the greatest extent practicable, after performing the EJ analysis contemplated in Executive Order 12898, and incorporating public comment, that this Recommended Determination under 404(c) in and of itself or if incorporated within any Final Determination, will not have a disproportionately high and adverse human health or environmental effect on the low-income and minority populations of the project area. EPA notes that the scope of this Recommended Determination is limited to withdrawal of specification of Pigeonroost Branch and Oldhouse Branch as disposal sites for the discharge of dredged and/or fill material for the construction of valley fills and sediment ponds associated with the Spruce No. 1 Mine as currently authorized. This action neither prohibits nor authorizes coal mining.

C. Public Health

As interest in the overall environmental and human health effects from mountain top mining has been increasing, a growing body of research has suggested that health disparities are not uniformly distributed across the Appalachian region but are concentrated in areas, like the Spruce No. 1 Mine project area, where MTM activity takes place. Region III has conducted a preliminary review of existing literature on health impacts from MTM. The studies reviewed by Region III sought to evaluate whether associations between MTM and health exist. These studies do not provide direct assessments of environmental air and water quality in mining areas in relation to individual exposures and health outcomes. This more comprehensive research, including environmental chemical analyses and biological monitoring, would require significantly greater study than is appropriate for this Recommended Determination.

However, the results of these associational studies identify significant correlations between MTM activity and a variety of health disparities. These study findings indicate that health disparities are elevated in Appalachian coal mining regions for mortality rates for chronic respiratory, cardiovascular, and kidney disease, and for some forms of cancer including lung cancer. These studies by their nature could not and do not establish any causal linkage between MTM and these elevated rates of adverse health effects, but because they point to significant associations between MTM and elevated rates of adverse health impacts, the results warrant more research using rigorous epidemiological methods. The existing body of literature suggests that various negative health outcomes are not the result of a single exposure, but may reflect chronic exposures to multiple environmental contaminants, both air and/or water, which will vary for each individual.

The studies noted the following:

- Residents of areas in which coal mining activities take place have higher risk of cardiovascular disease (CVD) (OR=1.22, 95% CI 1.14-1.30), angina or coronary heart disease (CHD) (OR=1.29, 95% CI=1.19-1.39), and heart attack (MI) (OR=1.19, 95% CI

= 1.10-1.30) after adjusting for smoking, alcohol, gender, education, race, income, physician supply, and metropolitan status.

- Lung cancer mortality is higher in heavy coal-mining areas, followed by all other areas of Appalachia and the nation ($p < .001$) after accounting for covariates of gender, education, poverty, race, urban status, smoking, southern states, and Appalachian country.
- Total chronic heart, respiratory, and kidney disease, and kidney disease mortality rates were significantly higher in coal mining areas of Appalachia than non-coal mining areas.
- Among West Virginia adults, residential proximity to heavy coal production was associated with poorer health status and with higher risk for cardiopulmonary disease, chronic lung disease, hypertension, and kidney disease, after controlling for covariates (Spruce No.1 mine is in an area characterized by heavy coal production).
- Distance-weighted, at-risk population coal mining exposure measure was significantly correlated to cancer mortality in WV. For total cancer and three cancer-type subgroups, exposure was correlated after controlling for smoking rates. The variables had positive spatial autocorrelation and were spatially dependent. All components of mining (injection, preparation plants, impoundments, and mining sites) were related to one or more cancer types.
- Volume of coal mining significantly related to hospitalization risk for hypertension (odds increased 1% for each 1462 tons of coal) and COPD (odds increased 1% for each 1873 tons of coal) controlled for age, gender, insurance, co-morbidities, county poverty, county and social capital.
- The heaviest coal mining areas of Appalachia had the poorest socioeconomic conditions. Before adjusting for covariates, the number of excess annual age-adjusted deaths in coal mining areas ranged from 3,975 to 10,923, depending on years studied and comparison group.
- Living in proximity to mining areas increases the odds of low birth weight. In mining areas, odds of low birth weight are increased by 14 to 16% depending on the amount of mining as compared to areas with no coal mining.
- Ecological integrity was inversely related to age-adjusted cancer mortality rates (total $p < .01$; digestive, breast, and respiratory $p < .01$; urinary $p < .05$), controlled for poverty, access to health care providers, urbanization, education, smoking. Ecological integrity was significantly related to mining and cancer mortality and mining was significantly related to total cancer mortality.

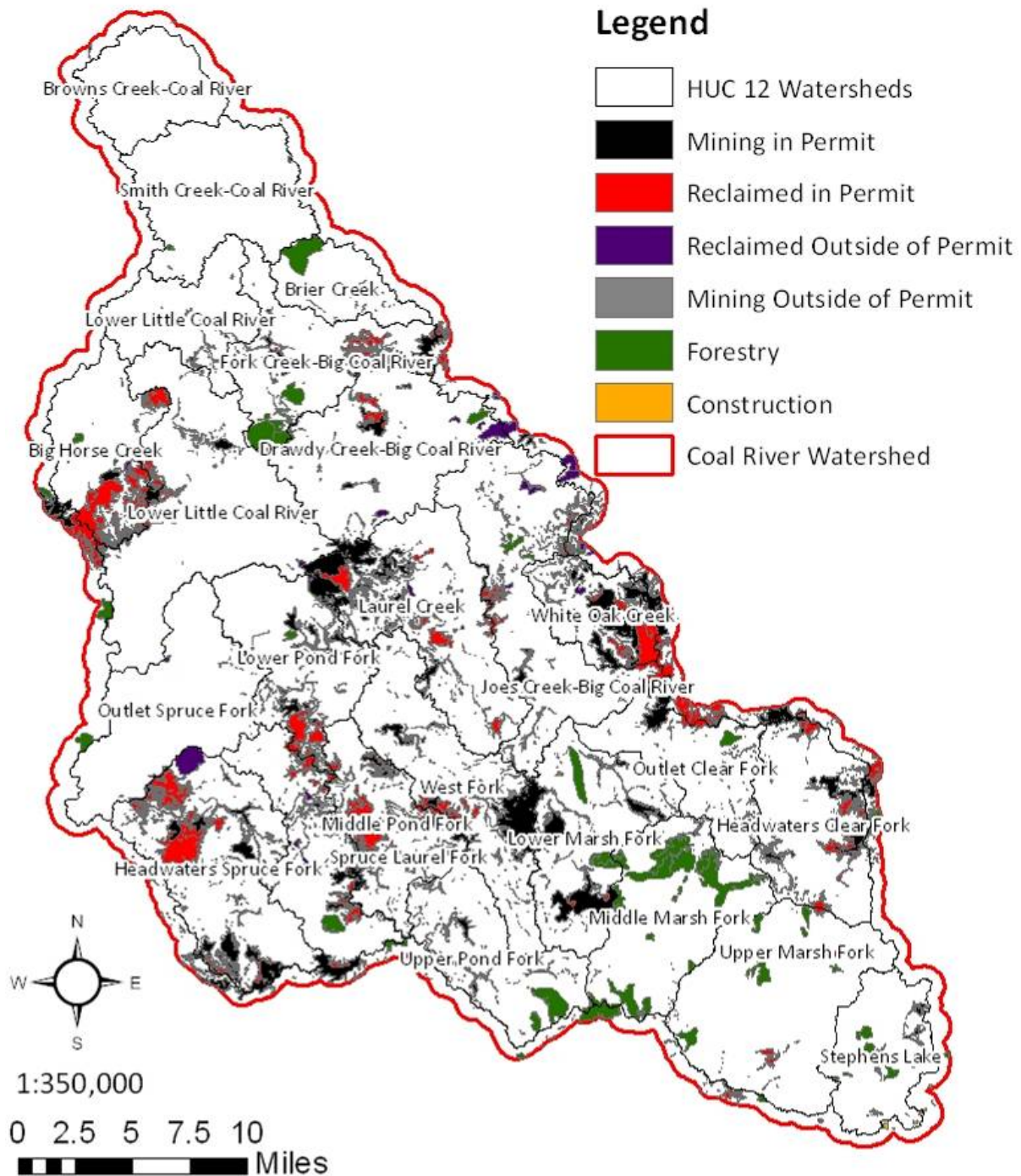
D. Cumulative Impacts

Fundamental to the Section 404(b)(1) Guidelines “is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.” 40 C.F.R. § 230.1(c).

The Section 404(b)(1) Guidelines (at 40 C.F.R. § 230.11(g)) also direct that factual findings be made regarding cumulative impacts on the aquatic ecosystem and that those findings be considered in determining whether the discharge complies with the foregoing restriction. To that end, the Section 404(b)(1) Guidelines describe the factual finding that must be made with respect to cumulative impacts as follows:

Determination of cumulative effects on the aquatic ecosystem. (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

For purposes of this analysis, Region III has considered cumulative impacts to the Coal River sub-basin (891 mi²) and the Spruce Fork sub-watershed (126.4 mi²) if the Spruce No. 1 Mine is constructed as authorized by DA Permit No. 199800436-3 (Section 10: Coal River) and other reasonably foreseeable (proposed and authorized but not constructed) surface mining projects within the Coal River sub-basin are constructed. This cumulative effects analysis also takes into consideration the past and present mining projects within the sub-basin and sub-watershed, and the extent to which they have affected the current baseline conditions within the sub-basin and sub-watershed (see Figure 14).



15). In the Spruce Fork sub-watershed, more than 54 past and present surface mine permits have been issued, which collectively occupy more than 33% of the land area. The proposed project will affect an additional 2,278 acres (3.56 mi²), which is equivalent to approximately 2.8% of the Spruce Fork sub-watershed. This percentage of land cover affected by surface mines will continue to increase in the Coal River sub-basin, as additional projects are proposed and authorized.

A 1997 WVDEP ecological assessment of the Coal River sub-basin indicated that because the sub-basin is becoming increasingly impaired due to stressors such as mining, there is a need to protect the remaining quality resources, highlighting the need to “[l]ocate and protect the few remaining high quality streams in the Coal River watershed....” Pigeonroost Branch and Oldhouse Branch, two of the streams directly affected by the proposed action, are high quality resources that support an exceptionally high number of mayfly taxa, both within the Central Appalachian Region and statewide (see Appendix 1). By directly impacting these streams, which serve as refugia for aquatic life and potential sources for recolonizing nearby waters, the proposed action will be likely to have a significant cumulative effect on the aquatic ecosystem integrity in the sub-basin.

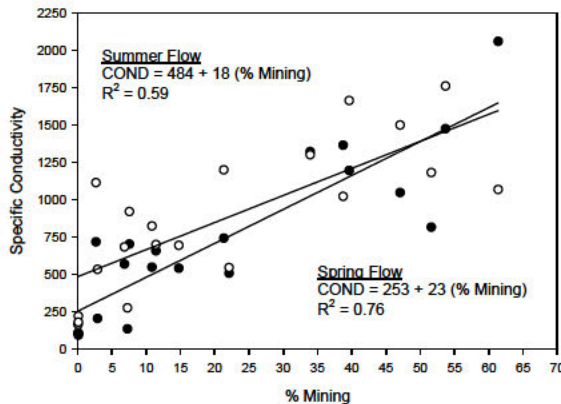
EPA is aware of at least 11 additional mining operations either proposed or authorized but not constructed in addition to Spruce No.1 in the Coal River sub-basin. Construction of valley fills and other discharges authorized by DA Permit No 199800436-3 (Section 10: Coal River) along with these additional projects in the Coal River Sub-basin, if constructed, would directly impact approximately 29.4 miles of stream channels, and would be likely to have significant secondary and cumulative effects on downstream waters in the Coal River sub-basin. Impacts from these projects can be expected to include reduced freshwater dilution, reduced headwater stream functional inputs, increased discharges of pollutants from the valley fills, including total dissolved solids (TDS) and selenium, and the potential to contribute to existing impairments within the Spruce Fork watershed and the Coal River sub-basin.

The Little Coal watershed contains 98 miles of impaired streams (33% of the streams in the watershed), and the Coal River sub-basin has 743 miles of impaired streams (30% of the streams in the sub-basin). WVDEP has listed these stream segments for selenium and biological impairment. The additional fills associated with the proposed action, in combination with past and present mining by the applicant and other mining in the sub-basin, will likely cause or contribute to significant cumulative adverse impacts to the stream resources in the Coal River sub-basin, and will likely contribute to current water quality impairments within the sub-basin.

Preliminary results from current research based upon WVDEP data show a strong correlation between the percentage of a watershed that is disturbed by mining activity and downstream conductivity levels (see Figure 15).

Coal River Watershed

Relationship between % Mining and Conductivity



Thresholds

Cond	% M	sp	% M	su
300	2	---		
500	12		1	
750	23		15	
1000	34		30	

*Analyses based on mining only sites; Equations do not differ significantly.

Figure 15: Coal River Watershed: Mining and Conductivity

Levels of conductivity on the mainstem of Spruce Fork, Pond Fork and the Little Coal River exceeded 500 $\mu\text{S}/\text{cm}$ almost every time WVDEP sampled these sites in 1997, 2002-2003, 2005 and 2008. The US Army Corps of Engineers Huntington District also reported conductivity values as part of the baseline water quality for Spruce Fork upstream and downstream of the proposed project area in the EIS for the proposed project (U.S. Army Corps of Engineers Huntington District 2006, DEIS Spruce No. 1 Mine). The DEIS reported that the minimum, average and maximum conductivity levels for Spruce Fork upstream of the propose project area were 112, 656 and 1130 $\mu\text{S}/\text{cm}$ at that time, indicating that on average the conductivity in Spruce Fork was already elevated greater than 500 $\mu\text{S}/\text{cm}$, and maximum conductivity levels exceeded twice that level.

Because construction of the Spruce No. 1 project and 11 additional mining operations would increase the percent of the sub-basin that is impacted by mining activity, it can be expected that these water quality effects will likely be exacerbated by these additional mines. EPA believes that the Spruce No. 1 project, in conjunction with the other mining operations either under construction or proposed for the Coal River sub-basin, will be likely to contribute to the significant cumulative loss of aquatic resources and degradation of water quality.

VII. Conclusions and Recommended Determination

Based on the foregoing analyses and upon consideration of the public comments received in response to Region III's Proposed Determination, Region III has determined that discharges of dredged and/or fill material to Pigeonroost Branch and Oldhouse Branch for the purpose of constructing the Spruce No. 1 Surface Mine as currently authorized by

DA Permit No. 199800436-3 (Section 10: Coal River) would likely have unacceptable adverse effects on wildlife. DA Permit No. 199800436-3 (Section 10: Coal River) authorizes construction of valley fills and sedimentation ponds and other discharges into Pigeonroost Branch and Oldhouse Branch that will bury approximately 6.6 miles of high quality headwater streams. Pigeonroost Branch and Oldhouse Branch support diverse and healthy biological communities comparable with conditions in nearby White Oak Branch, recognized by WVDEP as supporting least-degraded, reference quality conditions. Pigeonroost Branch and Oldhouse Branch represent streams within the larger Spruce Fork sub-watershed and Coal River sub-basin that remain relatively free of water quality degradation. As such, Pigeonroost Branch and Oldhouse Branch are valuable in and of themselves and within the context of the Spruce Fork sub-watershed and Coal River sub-basin.

As currently authorized the DA Permit discharges to Pigeonroost Branch and Oldhouse Branch would bury wildlife that live in those streams or within the footprint of the valley fills and minethrough areas. Other wildlife will lose important headwater stream habitat on which they depend for all or part of their lifecycles.

Wildlife impacts from the activities authorized by the permit will not be limited to direct burial of wildlife. Burial of Pigeonroost Branch and Oldhouse Branch would likely result in effects to downstream waters and downstream wildlife caused by the removal of functions performed by the buried resources and by transformation of the buried areas into sources that contribute contaminants to downstream waters. In addition, currently authorized discharges to Pigeonroost Branch and Oldhouse Branch would be likely to contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life would likely contribute to conditions that would support blooms of golden algae that release toxins that kill fish and other aquatic life.

Particularly in light of the high quality of the impacted resources, it is unlikely that the CMP for the project would offset these impacts. The proposed on-site created streams will be unlikely to replace the physical, chemical, and especially biological functions of Pigeonroost Branch and Oldhouse Branch.

For these reasons, I find that discharges to Pigeonroost Branch and Oldhouse Branch as currently authorized by DA Permit No. 199800436-3 (Section 10: Coal River) would be likely to have unacceptable adverse effects on wildlife.

Region III notes that, in addition to the adverse effects that form the basis of this Recommended Determination, there are other impacts about which Region III continues to have concerns. To the extent that discharge of excess spoil outside jurisdictional waters, deforestation, and other activities associated with the project depend upon specification of Pigeonroost Branch and Oldhouse Branch as disposal sites, adverse impacts on wildlife would likely result from those dependent activities. In addition, impacts from the project will contribute to cumulative impacts from multiple surface mining activities in the Coal River sub-basin. Region III continues to be concerned regarding environmental justice issues.

Accordingly, pursuant to Section 404(c) of the Clean Water Act and its implementing regulations at 40 C.F.R. Part 231 and for the reasons set forth herein, it is my recommendation that the specification embodied in DA Permit No. 199800436-3 (Section 10: Coal River) of Pigeonroost Branch and Oldhouse Branch as disposal sites for discharges of dredged and/or fill material for construction of the Spruce No. 1 Surface Mine be withdrawn.

Dated: September 24, 2010

Shawn M. Garvin
Regional Administrator
EPA Region III